

THE  
University of Arkansas  
Catalogue

1913-1914

Announcement for  
1914-1915

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# UNIVERSITY OF ARKANSAS LIBRARY

## THE UNIVERSITY CALENDAR

1914-1915

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### 1914

Sept. 16-19,	Entrance examinations and registration
Sept. 21, Monday,	Instruction begins
Nov. 26-27,	Thanksgiving recess
Dec. 18-Jan. 4,	Christmas vacation

### 1915

Jan. 23, Saturday,	Midyear examinations begin
Jan. 30, Saturday,	First semester closes
Feb. 1, Monday,	Second semester begins
May 14, Friday,	Medical College closes
May 29, Thursday,	Final examinations begin
June 6, Sunday,	Baccalaureate sermon
June 9, Wednesday,	Commencement day



# BOARD OF TRUSTEES

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<i>The Governor of Arkansas.....</i>	<i>Ex-Officio</i>
GEORGE W. HAYS.....	Little Rock
<i>The State Superintendent of Public Instruction.....</i>	<i>Ex-Officio</i>
GEORGE B. COOK.....	Little Rock
	<i>Term Expires</i>
Dr. CHARLES RICHARDSON, Fayetteville.....	1915
A. B. BANKS, Fordyce.....	1917
C. C. REID, Little Rock.....	1917
T. A. TURNER, Jonesboro.....	1917
J. D. HEAD, Texarkana.....	1919
H. L. PONDER, Walnut Ridge.....	1919
W. H. ASKEW, Magnolia.....	1919

## OFFICERS OF THE BOARD.

Chairman.....	Governor GEORGE W. HAYS
Secretary and Auditor.....	WILLIAM H. CRAVENS, Fayetteville

## COMMITTEES OF THE BOARD OF TRUSTEES.

*Executive Committee*—Governor Hays, Chairman; Messrs. Askew, Reid, and Richardson.

*Finance Committee*—Mr. Banks, Chairman; Messrs. Head, and Richardson.

*Teachers' Committee*—Mr. Cook, Chairman; Messrs. Askew, and Head.

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*Buildings and Grounds*—Mr. Ponder, Chairman; Messrs. Richardson, and Turner.

*Branch Normal*—Mr. Cook, Chairman; Messrs. Banks, and Askew.

*Medical College*—Mr. Cook, Chairman; Messrs. Head, and Ponder.

*Board of Control of the Agricultural Experiment Station*—The Committee of the College of Agriculture, the President of the University, the Director of the Station.

## OFFICERS OF ADMINISTRATION AND CORPS OF INSTRUCTORS

---

JOHN CLINTON FUTRALL, B. A. (University of Virginia, 1894),  
M. A. (*ibid.*, 1894).....226 N. College Ave.  
*President of the University.*

### THE UNIVERSITY COUNCIL.

JOHN CLINTON FUTRALL, M. A., *President of the University*  
EDGAR FINLEY SHANNON, M. A., Ph.D., *Dean of the College of  
Arts and Sciences and Professor of English*  
WILLIAM NATHAN GLADSON, M. S., E. E., Ph.D., *Chairman of  
the College of Engineering and Professor of Electrical Engi-  
neering*  
MARTIN NELSON, B. S. A., M. S., *Dean of the College of Agri-  
culture and Director of the Experiment Station.*  
— JAMES RALPH JEWELL, Ph.D., *Dean of the School of Education*  
GEORGE WESLEY DROKE, B. A., M. A., *Professor of Mathematics*  
JULIUS JAMES KNOCH, M. S., C. E., *Professor of Civil Engi-  
neering*  
CHARLES HILLMAN BROUGH, Ph.D., *Professor of Economics and  
Sociology*  
WALTER RAY WHELOCK, B. S. A., *Professor of Extension*

### OTHER OFFICERS OF ADMINISTRATION.

WILLIAM HAMPTON CRAVENS, *Secretary of the Trustees and  
Auditor of the University*  
NOBLE JAMES WILEY, B. S., LL. B., *First Lieutenant Fifth In-  
fantry, U. S. A., Commandant.*  
MARY DAVIS, *Dean of Women*  
— BURR WALTER TORREYSON, *Professor of Secondary Education*  
MARY AUSTIN, *Librarian*  
BIRTON NEILL WILSON, M. E., *Superintendent of Mechanic Arts*  
NOAH FIELDS DRAKE, Ph.D., *Curator of the Museum.*

## THE UNIVERSITY SENATE.

- JOHN CLINTON FUTRALL, M. A., *President of the University*
- GEORGE WESLEY DROKE, B. A. (University of Arkansas, 1880),  
M. A. (*ibid.*, 1884).....103 Hill Street  
*Professor of Mathematics*
- JULIUS JAMES KNOCH, B. S. (Grove City College, 1886), M. S.  
(*ibid.*, 1887), C. E. (Cornell University, 1892)  
*Professor of Civil Engineering* 402 N. College Avenue
- WILLIAM NATHAN GLADSON, B. M. E. (Iowa State College,  
1888), E. E. (*ibid.*, 1911), Ph.D., McLeanorsville College,  
1898).....820 W. Maple Street  
*Professor of Electrical Engineering*
- FRANK WELBORN PICKEL, B. A. (Furman University, 1886), M.  
S. (University of South Carolina, 1890), M. S. (University  
of Chicago, 1899).....808 W. Maple Street  
*Professor of Biology*
- BIRTON NEILL WILSON, B. S. M. E. (Georgia School of Tech-  
nology, 1896), M. E. (University of Michigan, 1909),  
241 N. College Street  
*Professor of Mechanical Engineering*
- CHARLES HILLMAN BROUGH, B. A. (Mississippi College, 1894),  
M. A. (*ibid.*, 1899), LL. B. (University of Mississippi, 1902),  
Ph.D. (Johns Hopkins University, 1898).  
312 N. College Avenue  
*Professor of Economics and Sociology, Secretary of the  
Senate*
- CHARLES GEIGER CARROLL, B. A. (Southwestern University,  
1895), M. A. (*ibid.*, 1896), Ph. D. (Johns Hopkins Univer-  
sity, 1904).....732 W. Maple Street  
*Professor of Chemistry*
- EDGAR FINLEY SHANNON, B. A. (Central University, 1893),  
M. A. (Harvard University, 1910), Ph.D., (*ibid.*, 1912).  
*Professor of English* 15 S. Duncan Street
- ANTONIO MARINONI, B. A. (Liceo of Desenzano, Italy, 1898),  
M. A. (Yale University, 1904).....621 Ida Avenue  
*Professor of Romance Languages*



- ROBERT ROBSON DINWIDDIE, V. S. (Ontario Veterinary College, 1886), M. D. (College of Physicians and Surgeons, 1896),  
728 W. Maple Street—  
*Professor of Pathology and Bacteriology*
- GILES EMMET RIPLEY, B. S. (Purdue University, 1899), M. S.  
ibid., 1902).....108 S. Duncan Street  
*Professor of Physics*
- MARTIN NELSON, B. S. A. (University of Wisconsin, 1905), M. S.  
ibid., 1906).....415 Washington Avenue  
*Professor of Agronomy*
- JOSEPH LEE HEWITT, B. S. A. (University of Missouri, 1905),  
*Professor of Plant Pathology*
- HENRY DOUGHTY TOVEY (Knox College).....614 Ida Avenue  
*Professor of Music, Head of Department of Fine Arts*
- RAYMOND CHARLES THOMPSON, B. S. (Kansas State Agricultural  
College, 1908).....10 E. Lafayette Avenue  
*Professor of Agricultural Chemistry*
- WALTER MATTHEW BRISCOE, B. A. (Ouachita College, 1900),  
*Professor of German* 619 Ida Avenue
- NOBLE JAMES WILEY, B. S. (Alabama Polytechnic Institute,  
1897), LL. B. (University of Alabama, 1899), First Lieu-  
tenant Fifth Infantry, U. S. Army...322 Washington Avenue  
*Professor of Military Science and Tactics and Com-  
mandant*
- NOAH FIELDS DRAKE, C. E. (University of Arkansas, 1888),  
A. B. (Leland Stanford University, 1894), M. A. (ibid., 1895),  
Ph.D. (ibid., 1897).....513 N. Highland Avenue  
*Professor of Geology and Mining*
- DAVID YANCEY THOMAS, B. A. (Emory College, 1894), M. A.  
(Vanderbilt University, 1898), Ph.D. (Columbia University,  
1903).....Fairview Avenue  
*Professor of History and Political Science*
- MARY DAVIS.....Carnall Hall  
*Dean of Women*
- JAMES RALPH JEWELL, M. A. (Coe College, Cedar Rapids, Ia.),  
Ph.D. (Clark College, Worcester, Mass.) 538 Leverett Street  
*Professor of Education*

- WILLIAM LUCIUS FOWLER, B. S. A. (University of Missouri, 1909).....358 Arkansas Avenue  
*Professor of Animal Husbandry*
- WILLIAM HALE WICKS B. S. A. (Oregon Agricultural College, 1904), M. S. (ibid., 1906), M. S. Agr. (Cornell University, 1908).....N. College Avenue  
*Professor of Horticulture*
- HENRY HARRISON STRAUSS, A. B. (University of Wooster, 1904), A. M. (Tulane University, 1909).....358 Arkansas Avenue  
*Acting Professor of Ancient Languages*
- WALTER RAY WHELOCK, B. S. A. (Ohio State University, 1913)  
*Professor of Extension* 528 N. College Avenue

### ASSOCIATE, ASSISTANT, AND ADJUNCT PROFESSORS

- GEORGE GROVER BECKER, B. S. (Cornell University, 1909)  
 328 N. College Avenue  
*Assistant Professor of Entomology*
- ROSE BLAND, B. A. (University of Illinois, 1909)  
*Assistant Professor of Education* 220 N. Block Street
- NEIL CAROTHERS, B. A. (University of Arkansas, 1905), Diploma in Economics (Oxford University, 1907)  
*Associate Professor of Economics* 212 N. College Avenue
- BOLLING JAMES DUNN, B. A. (Bethel College, 1871), M. A. (ibid., 1874).....116 S. Church Street  
*Associate Professor of Mathematics*
- CLEMENT TYSON GOODE, B. A. (Wake Forest College, 1905), M. A. (ibid., 1906), M. A. (Harvard University, 1911),  
*Associate Professor of English* 12 W. Dixon Street
- ROLAND M. GOW, D. V. M. (Ohio State University, 1909)  
 628 W. Maple Street  
*Assistant Professor of Veterinary Science*
- JAMES RICHARD GRANT, B. A. (University of Arkansas, 1907), Ph.B. (Northern Illinois Normal College, 1909)  
*Assistant Professor of Philosophy* 95 S. Duncan Street
- ARTHUR MCCracken HARDING, B. A. (University of Arkansas, 1904).....537 Leverett Street  
*Associate Professor of Mathematics*

- FRANK CLAYBOURNE HAWKINS, B. A. (University of Arkansas, 1909).....Corner Church and Meadow Streets  
*Adjunct Professor of Ancient Languages*
- JACOB GARRETT KEMP, B. A. (University of Illinois, 1906), M. A. (ibid., 1910), Ph.D. (ibid., 1912).....120 W. Spring Street  
*Associate Professor of Physics*
- VIRGIL PROCTOR KNOTT, B. C. E. (University of Arkansas, 1904),  
125 N. East Street  
*Associate Professor of Civil Engineering*
- WILLIAM CASPER LASSEITER, B. S. A. (University of Wisconsin, 1909).....225 N. College Avenue  
*Assistant Professor of Agronomy*
- MAX CARL GUENTHER LENTZ 369 Gregg Street  
*Associate Professor of German*
- KIRTLEY FLETCHER MATHER, B. S. (Dennison University, 1909),  
*Assistant Professor of Geology* 20 E. Spring Street
- BRAINERD MITCHELL, JR., B. M. E. (University of Arkansas, 1907), M. E. (ibid., 1911).....S. Duncan Street  
*Assistant Professor of Mechanical Engineering*
- HUGH ELLIS MORROW, B. S. A. (University of Arkansas, 1904),  
*Associate Professor of Chemistry* 516 Leverett Street
- WALLACE CARL MURPHY, B. A. (University of Arkansas, 1909),  
M. A. (Chicago University, 1912).....511 N. Willow Street  
*Assistant Professor of History and Political Science*
- LIE SEDWICK OLNEY, B. E. E. (University of Arkansas, 1905),  
622 W. Lafayette Street  
*Associate Professor of Electrical Engineering*
- CHARLES VLADIS RUZEK, B. S. A. (University of Wisconsin, 1909).....412 E. Lafayette Avenue  
*Assistant Professor of Agronomy*
- WILLIAM BOYD STELZNER, B. E. E. (University of Arkansas, 1907), E. E. (ibid., 1911).....222 N. College Avenue  
*Adjunct Professor of Electrical Engineering*

## INSTRUCTORS

- HELEN ADAMS.....318 E. Lafayette Avenue  
*Instructor in Piano*
- RAMON ADAMS.....Mountain Street  
*Instructor in Violin*
- FRANK BARR.....219 N. Church Street  
*Instructor in Band Instruments*
- MARY CUMMINGS BATEMAN.....327 Washington Avenue  
*Instructor in Vocal Music*
- MABEL BELL.....Spring Street  
*Instructor in Piano*
- JOHN MALLORY BORDERS, B. S. A. (University of Arkansas,  
1907).....120 W. Spring Street  
*Instructor in Extension*
- DE HELLIK BRANSON, B. S. A. (Kansas State Agricultural Col-  
lege, 1913)  
*Instructor in Animal Husbandry*
- SAMUEL SPENCE BUCKLEY, B. C. E. (University of Arkansas,  
1913).....346 Arkansas Avenue  
*Instructor in Civil Engineering*
- WILLIE VANDEVENTER CROCKETT.....318 E. Lafayette Avenue  
*Instructor in Expression*
- HERMAN WAKIMAN DEAN.....314 W. Mountain Street  
*Instructor in Mechanical Engineering*
- WILLIAM EDGAR DUCKWORTH.....367 N. Gregg Street  
*Instructor in Mechanical Engineering*
- JOHN WAINWRIGHT EVANS, B. A. (Princeton University, 1907),  
*Instructor in English* Buchanan Street
- WALTER SAMUEL FIELDS, B. S. (Michigan Agricultural College,  
1912).....416 N. College Avenue  
*Instructor in Plant Pathology*
- ELIZABETH GALBRAITH.....3 E. Lafayette Avenue  
*Instructor in Art*
- MARY GARNEIT HARRIS.....324 Washington Avenue  
*Instructor in Romance Languages*
- J. S. KNOX, B. S. A., M. S. A.,  
*Instructor in Horticulture*



- CLIFFORD LESLIE McARTHUR, B. S. A. (Oklahoma Agricultural College, 1913).....420 N. College Avenue  
*Instructor in Animal Pathology*
- EMILYEN MEEGER, B. S. A. (University of Wisconsin, 1906).....403 E. Lafayette Avenue  
*Instructor in Art*
- CLARA MILLER, Ph. B. (University of Chicago, 1906)  
*Instructor in Physical Education*.....402 Arkansas Avenue
- LYNN WESLEY OSBORN, B. S. A. (Iowa State College, 1913)  
*Instructor in Agronomy*
- SARAH PETTIT, B. S. (Columbia University, 1911)  
229 N. College Avenue  
*Instructor in Home Economics in Charge*
- MABEL SANBORN.....402 Arkansas Avenue  
*Instructor in Education*
- BENJAMIN S. RABBITZ, B. A. (College of the City of New York, 1911), M. A. (Columbia University, 1913).....125 N. East Street  
*Instructor in Biology*
- KATE WITHERS SIMPSON.....244 N. East Street  
*Instructor in Education*
- MRS. KENNETH CHARLES THORNTON, B. S. (Kansas State Agricultural College, 1907).....110 E. Lafayette Avenue  
*Instructor in Home Economics*
- JOHN STANLEY TURNER, B. A. (University of Cambridge, England, 1906).....537 Leverett Street  
*Instructor in Mathematics*
- HARTLEY EUGENE TUCKER, B. S. (Michigan Agricultural College, 1912).....411 N. College Avenue  
*Instructor in Horticulture*
- JOHN RUSSELL TURNER, B. S. A. (University of Arkansas, 190).....Parksdale Addition  
*Instructor in Agricultural Chemistry*
- EDWARD PHOEBUS WALKER, B. A. (Mercer University, 1905), M. A. (Columbia University, 1908).....732 W. Maple Street  
*Instructor in English*
- ROGER WILLIAMS, M. A. (Harvard University, 1911),  
*Instructor in English*.....125 East Street

## OTHER OFFICERS

- BRUCE WESLEY DICKSON, M. A. (University of Arkansas  
1912).....312 N. College Avenue  
*Secretary of the Young Men's Christian Association*
- MARGARET WILSON, B. A. (Park College, 1910).....Carnall Hall  
*Secretary of the Young Women's Christian Association*
- MRS. F. S. PARKE.....Carnall Hall  
*Superintendent of the Women's Dormitory*
- EUNICE BURNS.....Hill Hall  
*Superintendent of the Men's Dormitories*
- EARLE THOMAS PICKERING, LL. B. (University of Minnesota,  
1912).....403 Lafayette Avenue  
*Director of Physical Culture and Athletics*

## SCHOLARS IN THE UNIVERSITY

- LOUISE CHEEVER, B. A., Graduate Scholar in Pedagogy
- LILLIAN LAWSON, B. A., Graduate Scholar in English
- LOWELL MOSS, B. A., Graduate Scholar in Chemistry
- KATHERINE BANTA, in English
- ORA BLACKMUN, in German
- H. D. CARROLL, in Ancient Languages
- I. C. HOPPER, in History
- E. C. LAKE, in Economics
- SIDNEY MCGILL, in Electrical Engineering
- P. G. MAGNESS, in Civil Engineering

STANDING COMMITTEES OF THE UNIVERSITY  
SENATE

*Athletic Board*—Professors Carroll, Wiley, Wilson, Goode,  
Droke.

*Commencement*—Professors Brough, Wheelock, Pickel, To-  
vey, Grant, Mrs. Crockett, Mr. Dickson.

*Schedule*—Professors Wilson, Briscoe, Carroll, Strauss,  
Lassetter.

*Accredited Schools*—Professors Thomas, Jewell, Hewitt,  
Harding, Goode.

*Extension*—Professors Marinoni, Jewell, Gladson, Shannon,  
Wheelock, Ripley.

*Statistics*—Professors Ripley, Thompson, Harding, Mather, Ruzek, Stelzner, Mr. Walker.

*Graduate Studies*—Professors Jewell, Knoch, Carroll, Nelson, Marinoni.

*Advisers*—Professors Briscoe, Grant, Hawkins, Olney, Ruzek, Mr. Williams.

*Honorary and Higher Degrees*—Professors Droke, Dinwiddie, Pickel, Hewitt, Murphy.

*Student Affairs*—Professors Gladson, Shannon, Dunn, Bland, Miss Davis, Mr. Turner.

*Discipline*—Professors Shannon, Drake, Gladson, Nelson, Wiley.

*Honors*—Professors Knoch, Thompson, Hawkins, Stelzner, Mr. Walker.

*Student Organizations*—Professors Carroll, Brough, Strauss, Knoch, Carothers, Lentz.

*Catalogue*—Professors Nelson, Wilson, Ripley, Bland, Mr. Williams.

*Library*—Professors Drake, Fowler, Murphy, Mr. Evans, Mrs. Austin.

## THE UNIVERSITY TOWN

The University of Arkansas is situated in Fayetteville, Washington County, in the northwestern part of the state, in the heart of the Ozark Mountains. The elevation of the town is in the neighborhood of 1,500 feet. The surroundings are of great natural beauty, and the climate of the region is excellent.

Fayetteville may be reached both from the north and from the south by the Texas branch of the St. Louis and San Francisco ("Frisco") Railroad. The Muskogee division communicates with the west.

The Moral and religious conditions of the community are most favorable. There are fourteen churches in the town, representing nine denominations. The pastors of these churches actively interest themselves in the moral and spiritual welfare of the students.

By an act of the general assembly of the state, the liquor traffic has been barred from Fayetteville. Intoxicating liquors cannot be sold or given away within five miles of the University.

## SUMMER SCHOOL

The fifth Summer Session of the University will open on June 15, 1914, and close on July 25.

The courses offered in the Summer Session will be of grammar school, high school and collegiate grade. There will be a practice school for demonstration of methods in primary school work.

The high school and college courses will be given by members of the corps of instructors of the University and by a corps of experts in professional subjects brought in from outside the state.

More detailed information regarding the Summer Session may be had from the Summer Session Bulletin, which will be sent on application.

## GENERAL INFORMATION

## HISTORY

The University of Arkansas owes its origin to an act of Congress, approved July 2, 1862, providing that public lands should be granted to the several states, to the amount of "30,000 acres for each senator and representative in Congress," from the sale of which there should be established a perpetual fund, "the interest of which shall be inviolably appropriated by each state, which may take and claim the benefit of this act, to the endowment, support, and maintenance of at least one college, where the leading object shall be, without excluding other scientific and classical studies and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislature of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." The act forbids the use of any portion of the aforesaid fund, or the interest thereon, for the purchase, erection, or maintenance of any building or buildings. The states accepting the provisions of the act are required to provide for the construction and maintenance of the necessary buildings, and for the expenses of administration in carrying out the purposes of the act.

The general assembly of the state of Arkansas accepted the national law by passing an act, approved March 27, 1871, which provided for the location, organization and maintenance of the University of Arkansas.



Fayetteville, Washington County, was selected as the seat of the University and the institution opened on January 22, 1872.

The Experiment Station owes its origin to an act of Congress, of March 2, 1887 (The Hatch Act), under which act the University receives \$15,000 annually for the maintenance of the experiment station, "to aid in acquiring and diffusing among the people useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science." In 1906 the congress passed an act increasing this appropriation by the sum of \$5,000 the first year, and providing for an additional increase of \$2,000 per annum, until such increased appropriation reaches \$15,000 annually.

Under an act of Congress, approved August 30, 1890, the University receives \$25,000 annually, "to be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their application to the industries of life."

On March 4, 1907, the Congress passed an act increasing this appropriation at the rate of \$5,000 per annum, until the total amount appropriated annually reaches \$50,000.

As to the present divisions of the University, the College of Agriculture, long known as the School of Agriculture or the Department of Agriculture, appears as a separate division of the University in 1905. Until 1912 the only other division at Fayetteville was the College of Liberal Arts, Sciences and Engineering. In 1912 this was subdivided into a College of Arts and Sciences and a College of Engineering. The Summer Session of the University was inaugurated in 1910.

## EQUIPMENT

### BUILDINGS AND GROUNDS

The land occupied by the University and its various departments comprises about 120 acres.

There are at present some fifteen buildings on the campus. The value of these, exclusive of equipment, approximates \$800,000.

The buildings are heated by steam, lighted by electricity, and supplied with water from the city waterworks.

*University Hall*, erected in 1872, is the "old main building" of the University. It is five stories in height, 214 feet in length and 124 feet in depth, occupying three sides of a quadrangle. The building contains some seventy rooms. In this building are the President's offices and in it is carried on the most of the work of the College of Arts and Sciences.

*Engineering Hall*, erected in 1904, lies a short distance to the south of University Hall. It is built of pressed brick and native sandstone and limestone. This building is three stories high and is 150 by 58 feet. Here the most of the work of the College of Engineering is carried on.

*The Chemistry Building*, erected in 1905, is situated north of University Hall. It is two stories high and is 60 by 90 feet. This building houses the department of chemistry.

*Peabody Hall* is the most recently erected of the buildings and was made possible by a grant of \$40,000 from the George Peabody Fund. This building will accommodate the School of Education. The building has all modern improvements in heating, lighting and ventilation.

*College of Agriculture and Experiment Station Buildings.* The largest of these buildings, *Agricultural Hall*, is a brick structure two stories in height and 50 by 65 feet. It contains offices of the dean of the college, classrooms, and laboratories of the departments of agronomy and entomology. The *Dairy Building*, a stone building 45 by 75 feet and two stories in height, accommodates the department of animal husbandry and the work in dairying. Two smaller buildings accommodate the departments of pathology and bacteriology, horticulture, plant pathology, veterinary science, agricultural chemistry and agricultural extension. The equipment of this division of the University also includes several smaller buildings, e. g., a greenhouse, barns, implement and tool houses.

*The University Infirmary.* This is a one and one-half story brick building. The Infirmary has an open ward for men and one for women, a private ward for men and one for women, and a well isolated contagious ward.

*Dormitories.* There are three dormitories for men. *Buchanan Hall* is a three-story brick structure and contains some forty

rooms. *Hill Hall*, named in honor of Lieutenant-general D. H. Hill, C. S. A., who served as president of the University from 1877 to 1884, was erected in 1901. It is a three-story brick structure, and besides a dining hall, kitchen, store-rooms, etc., contains about twenty rooms for students. *Gray Hall*, erected in 1905, was named in honor of Colonel O. C. Gray, C. S. A., sometime professor of mathematics in the University. The building is two stories in height, is built of brick, and is 176 feet in length by 92 feet in depth. It contains 68 student rooms and will accommodate 136 students.

The dormitory for young women, *Carnall Hall*, erected in 1905, was named in honor of Miss Ella Carnall, Ph. M., sometime associate professor of English and modern languages in the University. The building has three stories, and has a frontage of 100 feet and a depth of 106 feet. Besides parlors, a dining-room and a recreation room, it contains rooms sufficient to accommodate about a hundred students.

#### LIBRARY

The general library which has so long occupied the second floor of the north wing of University Hall will, during summer vacation of 1914, be moved to the first floor of the south wing of University Hall. This new position will better enable the library to be braced from below so as to insure against breaking of the floor beams and also to provide better for the expansion of the library. The walls of the new library room have been appropriately decorated, a new floor laid, electric wiring for lighting installed. Steel stacks and other library fixtures will be added as means are available for completing the room.

During 1913 most of the unbound volumes of important magazines belonging to the library were bound, which, with new purchases of books, has added about a thousand new volumes to the library. The total number of volumes in the library may be taken at about 16,000 bound and 5,000 unbound volumes.

Besides the general library there are libraries belonging to colleges and departments of the University which if added to the general library would make a total of about 27,000 bound and probably 10,000 unbound volumes. These separate libraries are found in the College of Agriculture, the School of Education, the departments of Ancient Languages, English, German, Ro-

mance Language, Mathematics, Biology, Chemistry, Geology and Mining, Physics, Civil, Mechanical, and Electrical Engineering.

#### MUSEUM, ARMORY, ETC.

*The Museum* occupies a large portion of the fourth floor of University Hall. The contents of the museum have been collected with the view of facilitating instruction in geology and biology. That portion of the collection suitable for display is arranged in glass cases, while the working collection is in drawers.

*Relief Maps.* There have been placed in the museum the following relief maps: Geological relief maps of the State of Arkansas, the Colorado Canyon, Central Tennessee, and the United States; a convex relief map of the United States on a section of a globe sixteen feet in diameter; a relief map of Carmel Bay, California; Lee Springs craters, Utah; Yosemite Valley; Palestine; Mount Vesuvius; the State of California; San Francisco Peninsula; and a sectional geological relief map of the Leadville region, Colorado.

*The Mineral Collection.* The mineral collection contains about three thousand specimens, representing the different mineral groups. Many of these specimens are displayed in cases.

*The Petrographic Collection.* This collection consists of a large number of specimens representing sedimentary, igneous, and metamorphic rocks. Besides, there is a large collection of building and other kinds of stone from different parts of the country.

*Paleontological.* There is a large collection of invertebrate fossils in the museum, representing principally the fauna of the different geological horizons in northern Arkansas.

*The Major Earle Collection.* Major F. R. Earle has deposited in the museum his private collection of minerals and fossils.

*The Zoological and Botanical Collection.* This collection consists of two hundred birds and mammals, representing eighty species; two hundred reptiles and amphibians, representing forty species; fifteen hundred fishes, representing three hundred and fifty species; one thousand insects and other invertebrates, representing two hundred species; several skeletons.

*The Armory* is a large well-lighted room, sixty by eighty feet, occupying the entire basement of the north wing of the



University Hall. It is substantially fitted up with arm racks, compartments for equipments, and other conveniences.

*The Women's Gymnasium.* The women's gymnasium occupies the south wing of the basement floor of University Hall. It has been furnished as far as means were available with the equipment necessary for systematic physical training.

*The Athletic Field.* For the accommodation of the University football and baseball teams and spectators there is an excellent athletic field with a covered grandstand and bleachers. The baseball diamond has recently been rebuilt and greatly improved, the size of the athletic field has been almost doubled, and a first-class quarter-mile running track and football field are under construction. When the improvements now under way are completed the facilities afforded for outdoor exercises will be sufficient for the accommodation of a large number of students.

*The Practice Rooms* of the Department of Music are in the north wing of the fourth floor of University Hall.

## ADMINISTRATION AND ORGANIZATION

### GOVERNMENT

The Government of the University is vested primarily in a Board of Trustees, consisting of nine members. The Governor of the State and the Superintendent of Public Instruction are ex-officio members of the Board of Trustees; the other members are appointed by the Governor.

The administration of the University is vested in the President of the University, the University Council, the University Senate, the faculties of the several colleges, and the Deans and Chairmen of the colleges.

The President is the administrative head of the University. The University Council is composed of the President, the Deans and Chairmen of the separate colleges and five other members, appointed by the President. The Council is the central executive body of the University and is advisory to the President.

The University Senate is composed of the President of the University, the Deans or Chairmen of the college faculties, the Dean of Women, and all heads of departments and professors in the colleges. The Senate is the general legislative body of the University.

The faculties of the colleges of the University are composed of the members of the corps of instruction of these colleges. They have jurisdiction, subject to higher University authority, over all matters that concern exclusively their colleges.

The Deans and Chairmen of the colleges are responsible for the carrying out of all University regulations within their respective colleges. The Dean of Women acts as an adviser to women undergraduate students and is charged with the general care and conduct of these students.

#### DIVISIONS OF THE UNIVERSITY

For the purposes of administration the University, that part of which is located at Fayetteville, is divided into three separate but interdependent colleges, and the School of Education.

These are:

- I. The College of Arts and Sciences.
- II. The College of Engineering.
- III. The College of Agriculture.
- IV. The School of Education.

*The College of Arts and Sciences* offers courses in—

- (1) The ancient classical languages
- (2) The Romance languages
- (3) The Germanic languages
- (4) The English language and literature
- (5) Mathematics and astronomy
- (6) Physics
- (7) Chemistry
- (8) Biology
- (9) Geology
- (10) History and Political Science
- (11) Economics and sociology
- (12) Philosophy
- (13) Education
- (14) Fine Arts (music, art, expression,

*The College of Engineering* offers courses in—

- (1) Civil engineering
- (2) Chemical engineering
- (3) Electrical engineering
- (4) Mechanical engineering
- (5) Mining engineering

*The College of Agriculture* offers courses in—

- (1) Agricultural chemistry
- (2) Agronomy
- (3) Animal husbandry
- (4) Bacteriology
- (5) Entomology
- (6) Horticulture
- (7) Plant pathology
- (8) Veterinary science
- (9) Extension and agricultural education

*Military Science* is offered in all of the colleges

*Physical Education* is provided for women.

## ADMISSION TO THE COLLEGES

### ADMISSION WITHOUT CONDITIONS

For unconditional admission to any of the colleges, a student will be required to present fourteen units of high school or other secondary school work, so chosen as to include those prescribed by the particular college that he wishes to enter. (A unit is the equivalent of a preparatory subject of five periods of forty-five minutes each weekly throughout an academic year of nine months. In laboratory courses two laboratory periods are counted equal to one recitation period.)

Entrance credits may be secured by—

- (a) Certification from an accredited school (see page 26).
- (b) Examination (see page 25).
- (c) Transfer of credits from another university or college (see page 29).

### ADMISSION WITH CONDITIONS

Students who desire to enter the regular courses of the colleges may enter and be classified as conditioned students, pro-

vided their deficiencies do not exceed three units. Conditions may be removed by private study, either with or without a tutor, and examination; or by taking certain of the collegiate courses and offering them in satisfaction of the deficiencies. A freshman course of three hours a week for a year is equivalent to one unit.

### ENTRANCE REQUIREMENTS

Of the 14 units required, the following units are prescribed for admission to the freshman class in all of the colleges of the University:

#### UNITS PRESCRIBED BY ALL THE COLLEGES

English .....	3 units
Algebra .....	1 unit
Geometry .....	1 unit
History .....	1 unit

Of the remaining 8 units, the individual colleges prescribe:

#### *College of Arts and Sciences:*

History .....	$\frac{1}{2}$ unit
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For B. A. students only:

Foreign language .....	3 units
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At least two units must be in one language, and all three units must be in Latin if the student proposes to study Latin in the college.

#### *College of Engineering:*

Algebra .....	$\frac{1}{2}$ unit
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#### *College of Agriculture:*

Science (elective) .....	1 unit
Algebra .....	$\frac{1}{2}$ unit

For admission to the special course in music in the college, Algebra and Geometry, 2 units, are not required.

#### SUBJECTS ACCEPTED FOR ADMISSION

The following table shows the subjects accepted for admission, the maximum and minimum number of units which may



be offered in any particular subject, and the units required in the various colleges.

Subjects	Max.	Min.	Arts and		
			Sciences	Agri.	Eng.
English .....	4	3	3	3	3
Algebra .....	2	1	1	1	1½
Geometry .....	1½	1	1	1	1
Trigonometry .....	½	½	...	...	...
History .....	4	1	1½	1	1
Civil Government .....	½	½	...	...	...
Economics .....	½	½	...	...	...
Latin .....	4	1	} 3; at least 2 in one language	} At least one unit in science	
Greek .....	3	1			
French .....	3	1			
German .....	3	1			
Spanish .....	3	1			
Biology .....	1	½			
Botany .....	1	½			
Zoölogy .....	1	½	...		
Physiology .....	1	½	...		
Physics .....	1	½	...		
Chemistry .....	1	½	...		
Physical Geography .....	1	½	...	...	...
Agriculture .....	1	½	...	...	...
Pedagogy .....	½	½	...	...	...
Psychology .....	½	½	...	...	...
<sup>1</sup> Music .....	3	1	...	...	...
Drawing .....	2	1	...	...	...
<sup>2</sup> Manual Training .....	2	1	...	...	...
<sup>2</sup> Domestic Science and Art..	1	½	...	...	...
<sup>2</sup> Commercial Geography....	½	½	...	...	...
<sup>2</sup> Bookkeeping .....	1	½	...	...	...

<sup>1</sup> Only for students entering the special course in Music.

<sup>2</sup> The maximum number of units allowed in commercial and vocational subjects is three.

#### DESCRIPTION OF SUBJECTS ACCEPTED FOR ADMISSION

The following descriptions will indicate the amount of work that should enable a student to pass entrance examinations in the subjects which may be offered in making up entrance credits.

ENGLISH.—*Composition and Rhetoric*.—Correct spelling, capitalization, punctuation, paragraphing, idiom and definition will be required, together with a knowledge of the elements of rhetoric.

ENGLISH.—*Literature*.—It is expected that each candidate will have read certain assigned literary masterpieces and will have given careful study to certain other works. The requirements in detail are:

I. *General Reading*.—(Ten units are to be selected, two from each group.) The candidate will not be expected to know these minutely, but to have freshly in mind their important parts. On examination, he will be required to write a paragraph or two on each of several topics drawn from them.

I. The Old Testament Books—*Genesis, Exodus, Joshua, Judges, Samuel, Kings, Daniel, Ruth and Esther; The Odyssey* (Books I-V, XV-XVII may be omitted); *The Iliad* (Books XI, XIII-XV, XXI may be omitted); Virgil, *Aeneid*. For any unit of this group a unit from any other group may be substituted.

II. Shakspeare's *Merchant of Venice, Midsummer Night's Dream, As You Like It, Twelfth Night, Henry Fifth, Julius Caesar*.

III. Defoe's *Robinson Crusoe* (Part 1), Goldsmith's *Vicar of Wakefield*, Scott's *Ivanhoe* or *Quentin Durward*, Hawthorne's *House of Seven Gables*, Dickens' *David Copperfield* or *Tale of Two Cities*, Thackeray's *Henry Esmond*, Mrs. Gaskell's *Cranford*, George Eliot's *Silas Marner*, Stevenson's *Treasure Island*.

IV. Bunyan's *Pilgrim's Progress* (Part 1), *The De Coverley Papers*, Franklin's *Autobiography* (condensed), Irving's *Sketch Book*, Macaulay's *Essays on Lord Clive and Warren Hastings*, Thackeray's *English Humorists; Selections from Lincoln*, including at least the two inaugurals, the Speeches in Independence Hall and at Gettysburg, the Last Public Address, and Letter to Horace Greeley, a brief *Memoir or Estimate*; Parkman's *Oregon Trail*, Thoreau's *Walden*, or Huxley's *Autobiography*, and *Selections from Lay Sermons*, including the addresses *On Improving Natural Knowledge, A Liberal Education*, and *A Piece of Chalk*; Stevenson's *Inland Voyage* and *Travels with a Donkey*.

V. Palgrave's *Golden Treasury* (First Series) Books II and

III, with special attention to Dryden, Collins, Gray, Cowper, and Burns; Gray's *Elegy*, and Goldsmith's *Deserted Village*, Coleridge's *Ancient Mariner*, and Lowell's *The Vision of Sir Launfal*, Scott's *Lady of the Lake*, Byron's *Childe Harold* (Canto IV), and *Prisoner of Chillon*; Palgrave's *Golden Treasury* (First Series), Book IV, with especial attention to Wordsworth, Keats, and Shelley; Poe's *Raven*, Longfellow's *Miles Standish*, and Whittier's *Snow-Bound*, Macaulay's *Lays of Ancient Rome*, and Arnold's *Sohrab and Rustum*, Tennyson's *Gareth and Lynette*, *Launcelot and Elaine*, and *Passing of Arthur*; Browning's *Cavalier Tunes*, *Lost Leader*, *How They Brought the Good News*, *Home Thoughts from Abroad*, *Home Thoughts from the Sea*, *Incident of the French Camp*, *Hervé Riel*, *Pheidippides*, *My Last Duchess*, *Up at a Villa—Down in the City*.

2. *Careful Study*.—Certain books are prescribed for careful study. Candidates will be examined upon the subject matter, literary form, and logical structure of these, and in addition, may be required to answer questions involving the leading facts in those periods of English literary history to which the prescribed works belong. The list is:

Shakspeare's *Macbeth*, Milton's *L'Allegro*, *Il Penseroso*, and *Comus*, Burke's *Speech on Conciliation with America*, or Washington's *Farewell Address* and Webster's *First Bunker Hill Oration*; Macaulay's *Life of Johnson*, or Carlyle's *Essay on Burns*.

In connection with the reading and study of the prescribed books, parallel or subsidiary reading should be encouraged, and a considerable amount of English poetry should be committed to memory.

Though there is no formal examination in grammar or rhetoric, the ability to write good English will be considered of the utmost importance. Serious defectiveness in point of spelling, grammar, idiom, punctuation, clear and accurate expression, or division into paragraphs, will be taken as primary evidence of the candidate's unfitness. The candidate may present, as an additional evidence of preparation, an exercise book properly certified by his instructor, containing compositions or other written work.

ALGEBRA.—*One unit*.—A course based on Hawkes-Luby-Touton's *First Course in Algebra* to page 288, or its equivalent, will

be considered as one unit. This admits the student to Math. 6, or Math. 3.

*One and one-half units.*—The student who has completed, in addition to the first unit, a course based on Hawkes-Darby-Touton's *Second Course in Algebra*, or the equivalent, will be allowed one and one-half units. This course must include theory of quadratics, simultaneous quadratics, inequalities, ratio and proportion, variation, progressions (arithmetical, geometrical, and harmonical), binominal theorem, and logarithms. This admits the student to Math. 1a.

*Two units.*—The student who has completed Wells' *Advanced Course in Algebra* to page 428, or the equivalent, will be allowed two units. This additional half unit will not be given unless the course is equivalent to Math. 1a.

GEOMETRY.—*Plane Geometry.*—All of plane geometry is required for admission to the freshman class. A note book containing the solution of at least one hundred and fifty original exercises should be submitted for inspection. One unit.

*Solid and Spherical Geometry.*—Applications to the solutions of original exercises are emphasized. One-half unit.

TRIGONOMETRY.—*One-half unit.*—The student who has completed any standard high school text in Trigonometry will be allowed one-half unit.

HISTORY.—*Ancient History.*—The completion of a standard text-book, with emphasis on the history of Greece and Rome and some attention to geography, will meet the requirements for one unit.

*Medieval and Modern History.*—A standard text covering the history of Europe in medieval and modern times, some parallel reading, and a knowledge of the geography involved.

*English and American History.*—An advanced high school text should be used for a unit on either subject, together with outside readings and a study of the geography involved. The use of current newspapers and magazines advised. The presentation of a note-book will help in case of examinations.

CIVIL GOVERNMENT.—One-half unit will be allowed in this subject for the completion of some standard text, such as those of Garner, or James and Sanford.

**ECONOMICS**—One-half unit in Economics will be granted for completion of any standard text in elementary economics, such as those of Bulloch, Seligman, or Ely.

**LATIN**—The minimum requirements in Latin are the reading of four books of Caesar and of four orations of Cicero, or the equivalent in other prose; a thorough knowledge of the forms and of the fundamental constructions of verb and noun; and the ability to translate into idiomatic Latin such sentences as those found in Bennett's *Latin Writer*. Students offering Virgil should have had four years of competent instruction in Latin, and should have read not less than six books of the *Æneid*. For this a credit of one additional unit will be allowed.

**GREEK**—The requirements can be met by not less than three years of competent instruction in the preparatory school. The ground covered should be the same as that in Greek I and 2 of the college courses. (See page 53), or the equivalent.

**FRENCH—First Year's Work**—The candidate should have a knowledge of elementary grammar and irregular verbs, must be able to read easy French prose at sight, and must have read at least 200 pages of simple prose.

**Second and Third Year's Work**—The candidate will be expected to be able to translate standard French prose and poetry at sight and turn easy English prose into French. The candidate should have read 700 pages of such authors as Daudet, Lebl, Soule, Dumas, Audier, Labiche and Martin, and Hugo.

**German—First Year's Work**—The student should know the rudiments of grammar and possess an ability to read easy prose at sight and to translate simple English sentences into German. He should have read 200 pages of easy prose.

**Second and Third Year's Work**—The student should be able to read modern German prose and poetry at sight and to translate easy English narrative into German. He should have read and memorized the works of Richl, Heyse, Freytag, Baumbach, Heine, Gellert and Schiller, and 30 pages of lyrics and ballads.

**SPANISH**—For one and two units respectively the time and amount of work should be the equivalent of that required in French.

**GENERAL PROFICIENCY**—For one unit the student should spend a



year on the subject, two double periods being given to laboratory work. Students taking the examination must present note-books and drawings showing the work done.

**BOTANY.**—An acquaintance with the general structure of plants and of their principal organs and their functions is required, together with an ability to classify the more common species. A laboratory note-book covering two hours of laboratory work per week for one year must be presented.

**ZOOLOGY.**—The requirements are equivalent to those for physics, *mutatis mutandis*. A certified laboratory note-book, covering two hours of preparatory work per week for one year, must be presented for examination.

**PHYSICS.**—The completion of any one of the standard high school text-books on the subject, together with at least two hours of laboratory work for one year, will meet the requirement for one unit. A certified laboratory note-book must be presented for examination.

**CHEMISTRY.**—The instruction must have included both recitations and laboratory work. Such courses as are given in the best high schools in one year will be equivalent to the one unit required. Laboratory notes bearing the teacher's endorsement must be presented for examination.

**PHYSIOLOGY.**—For a unit in this subject the student must spend a year on a standard high school text, such as those of Hough and Lee or Martin, together with individual laboratory instruction and demonstration work. Note-books and drawings required.

**PHYSICAL GEOGRAPHY.**—One unit will be accepted for a year's work based on text-book and laboratory.

**AGRICULTURE.**—For one unit, a year of recitation work based on a standard text, such as Warren's or its equivalent, supplemented by at least one laboratory or practicum period a week for a half year.

**PSYCHOLOGY.**—For a half year's work based on Colvin and Bagley or Titchener the equivalent one-half unit will be allowed.

**PEDAGOGY.**—A course based on Dinsmore's *Teaching a District School* or Kern's *Among Country Schools* will be the equivalent of half a unit.

**MUSIC.**—A unit in music is equivalent to two lessons a week, of at least thirty minutes each, together with three hours of practice, five days a week, throughout a year.

**MANUAL TRAINING AND MECHANICAL DRAWING.**—The time required in each of these subjects is the equivalent of five double periods each week for one year, or five single periods for two years. The two subjects should be pursued in parallel courses.

**DOMESTIC SCIENCE AND ART.**—One unit may be presented for a year's work in either cooking or sewing, or for a combination of the two. The time must be the equivalent of that given to physics.

**COMMERCIAL GEOGRAPHY.**—One-half unit will be allowed for a half year's work in this subject. The course should deal with physical conditions, race and religion, economic forces, and transportation as affecting commerce, all with particular reference to the United States. Physical geography should precede.

**BOOKKEEPING.**—One unit will be allowed for a year's work on bookkeeping, invoices, accounts, sales, notes, etc. The time must be equivalent to that spent on other subjects. The character of the work presented by the student as the result of his study will be the best evidence that he deserves the credit.

### *Entrance Examinations.*

Entrance examinations may be taken at the University, or by special arrangement, at other places.

For 1914 the order of examinations at the University is as follows:

Geometry .....	Wednesday, Sept. 16, 1 p. m. to 3 p. m.
Algebra .....	Thursday, Sept. 17, 1 p. m. to 4 p. m.
Latin .....	Friday, Sept. 18, 1 p. m. to 4 p. m.
English Composition and Literature .....	Saturday, Sept. 19, 9 a. m. to 12 m.
United States History, .....	Saturday, Sept. 19, 2:30 p. m. to 4 p. m.
European History .....	Saturday, Sept. 19, 2:30 p. m. to 4 p. m.

The time of examinations in other subjects will be announced at the opening of the University.

Students living at a distance from the University may obtain special entrance examinations, if application is made in due time before the beginning of the sessions. These examinations will

be conducted by a principal of any school, or by a county examiner, under conditions that will be indicated when the application is made.

### ADMISSION BY CERTIFICATE

Graduates from accredited schools of Class A may be admitted without conditions to the freshman classes in the colleges of the University without examination, provided, in every case, certificates from the principal of the school attended have been presented. Such certificates must contain specific statements of the kind and extent of work done. *Diplomas of graduation will not be accepted in lieu of certificates.* All certificates are passed upon by the Committee on Accredited Schools of the University Senate.

Blank forms for certificates will be sent to the principals of the various accredited schools shortly before the close of the school year. Principals are requested to fill out certificates for each graduate of the year and forward them to the University as soon as may be convenient.

Graduates from accredited schools of Class B may enter the University by certificate, as in the case of graduates from schools of Class A. However, such graduates will enter with conditions, that is, will lack two or three of the fourteen units required. They will be admitted to the freshman classes of the college and permitted to make good their deficiencies while in attendance at the University (see page 19).

Graduates from schools of Class C cannot enter the University by certificate. They must do a third year of high school work, or if they lack no more than two units, may by private study prepare to stand the entrance examinations.

Prospective University students in high schools should take notice that the policy of the University is to discourage them from coming to the University before graduation from the high school.

## LIST OF ACCREDITED SCHOOLS

## CLASS A

*Schools accredited in work amounting to 14 units or more.*

Amity High School	Jonesboro High School
Argenta High School	Junction City High School
Arkansas Cumberland College	Lake Village High School
Arkansas State Normal	Little Rock College
Arkadelphia High School	Little Rock High School
Ashdown High School	Lonoke High School
Augusta High School	Magnolia High School
Bentonville High School	Malvern High School
Berryville High School	McAlester (Okla.) High School
Blytheville High School	Mena High School
Booneville High School	Monticello High School
Brinkley High School	Morrilton High School
Cabot High School	Mountain Home Academy
Camden High School	Nashville High School
Carlisle High School	Paragould High School
Charleston High School	Paris (Texas) High School
Clarendon High School	Piggott High School
Clarksville High School	Pine Bluff High School
Clary Training School	Pocahontas High School
Corning High School	Portland High School
Cotter High School	Prescott High School
Crescent College Academy	Rector High School
Crossett High School	Rogers High School
Dardanelle High School	Rogers Academy
De Queen High School	Russellville High School
Dumas High School	Siloam Springs High School
El Dorado High School	Sloan Hendrix Academy
England High School	Springdale High School
Eureka Springs High School	Stamps High School
Fayetteville High School	Stephens High School
Fordyce High School	Stuttgart High School
Forrest City High School	Stuttgart Training School
Fort Smith High School	Texarkana High School
Gentry High School	Tulsa (Okla.) High School
Green Forest High School	University Training High School
Guthrie (Okla.) High School	Van Buren High School
Hamburg High School	Waldron High School
Harrison High School	Warren High School
Hazen High School	Warren Training School
Helena High School	Western Military Academy
Hope High School	Wynne High School
Hot Springs High School	
Huntington High School	
Jacksonville High School	

## CLASS B

*Schools accredited in work amounting to 11-13 units.*

Arkansas City High School	Mammoth Springs High School
Bellefonte High School	Marianna High School
Benton High School	Marshall High School
Bigelow High School	Marvell High School
Cale High School	Moro High School
Choctaw High School	Mountain Home High School
Conway High School	Mulberry High School
Danville High School	Newport High School
Dermott High School	Okolona High School
De Vall's Bluff High School	Ozark High School
Gravette High School	Prairie Grove High School
Greenwood High School	Rison High School
Harrisburg High School	Searcy High School
Hartford High School	Star City High School
Havana High School	Sutton High School
Heber Springs High School	Trenton High School
Hesperian High School	Tuckerman High School
Lockesburg	Waldo High School
Hinemon-Union School,	Washington High School
Monticello	Wilton High School
Lockesburg High School	Hesperial High School
McCrary High School	

## CLASS C

*Schools accredited in fewer than 11 units.*

Alma High School	Delight High School
Antoine High School	Des Arc High School
Atkins High School	DeWitt High School
Aubrey High School	Dover High School
Batesville High School	Earle High School
Bauxite High School	Edgemont High School
Bearden High School	El Paso High School
Beebe High School	Evening Shade High School
Belleville High School	Foreman High School
Bradford High School	Formosa High School
Cane Hill High School	Glenwood High School
Cato High School	Gurdon High School
Cave High School	Guy High School
Cherry Valley High School	Hampton High School
Cleveland High School	Hardy High School
Clinton High School	Hatfield High School
Columbus High School	Hermitage High School
Daisy High School	Holly Grove High School.
Damascus High School	Horatio High School



Jasper High School	Plain View High School
Judsonia High School	Parkin High School
Kingsland High School	Palestine High School
Leslie High School	Paris High School
London High School	Pea Ridge Marine College
Luxora High School	Prairie View High School
McGehee High School	Plumerville High School
McNeil High School	Quitman High School
Magazine Academy	Ratcliff High School
Magazine High School	St. Paul High School
Manilla High School	Sheridan High School
Mansfield High School	Strong High School
Marrion High School	Sulphur Rock High School
Melbourne High School	Swifton High School
Montrose High School	Thornton High School
Mountain View High School	Tillar High School
Mount Judea High School	Tuckerman High School
Murfreesboro High School	Uniontown High School
Newark High School	Vick High School
Ola High School	Vilonia High School
Osceola High School	Walnut Ridge High School
Ouachita-Maynard Academy	West Fork High School
Poe High School	Wilmar High School
Pleasant Valley High School	Yellville High School

SCHOOLS ACCREDITED FOR ENTRANCE INTO THE COLLEGE OF  
AGRICULTURE

*Some advanced credit will be given.*

First District Agricultural High School.....	Jonesboro
Second District Agricultural High School.....	Russellville
Third District Agricultural High School.....	Magnolia
Fourth District Agricultural High School.....	Monticello

ADMISSION BY TRANSFER OF ENTRANCE CREDITS FROM OTHER  
COLLEGES OR UNIVERSITIES

A person who has been admitted to another college or university of good standing will be admitted to this University upon presenting a certificate of honorable dismissal from the institution from which he comes and an official statement of the subjects upon which he was admitted to such institution, provided it appears that the subjects are those required for admission to this University, or are substantially equivalent to the requirements of this University.

## ADMISSION TO ADVANCED STANDING

After registration, an applicant may secure advanced standing either by examination or by transfer of credits from another college or university.

1. *By Examination.* Advanced standing may be secured only by examination, unless the applicant is from another university or college. This examination must be taken within six weeks after the student first matriculates.

2. *By Transfer of Credits.* Credits of another college or university may be accepted for advanced standing. Applicants for such credits must present an official statement of the work done in the institutions from which they come, and must present certificates of honorable dismissal.

## ADMISSION AS SPECIAL STUDENTS

Persons over eighteen years of age, not candidates for a degree, may be admitted as special students on terms prescribed by the individual colleges. In every case they must secure the recommendation of the professor whose work they wish to take and the approval of the dean or chairman of the college concerned. The requirements of the different colleges are:

*College of Arts and Sciences.* Special students must be at least 20 years of age, except that persons at least 18 years of age will be permitted to enroll in the Department of Fine Arts.

*College of Engineering.* Special students must be at least 18 years of age, except that those taking special short courses or trades courses may be admitted at the age of 16.

*College of Agriculture.* Special students must be at least 18 years of age, except that those taking the short winter course may be admitted at the age of 16.

Special students are subject to the same regulations as regular undergraduate students. They may become candidates for graduation upon complying with all the necessary University regulations.

No person will be permitted to abuse the privilege of registering as a special student to secure merely nominal membership

in the University, whether for social purposes or to engage in athletics, or for any other reason.

No person will be allowed to register as a special student for more than one collegiate year, without the permission of the college faculty or faculties concerned.

## FEES AND EXPENSES

### FEES

The University year is divided into two terms, and all fees must be paid in advance at the beginning of each term. No student is allowed to enter any classes until his fees for the term are paid.

Fees are paid to the Secretary of the University.

Matriculation (paid by all students, \$7 at the beginning of each term).....	\$14.00
Student Activities fee (paid by all students, \$3 at the beginning of each term).....	6.00
Tuition (paid by all non-residents of Arkansas and by all others who do not hold beneficiary appointments, \$5 at the beginning of each term).....	10.00
Dormitory fee (paid yearly by all students rooming in the dormitories) .....	5.00
Diploma fee (payable at graduation). ....	5.00

Thus a student entering at any time during the first term must pay the matriculation fee of \$7 and the student activities fee of \$3, a total of \$10.00. If he is a non-resident of Arkansas or does not hold a beneficiary appointment he must, in addition, pay a tuition fee of \$5. The fees for the year are double those for the term, and the second payment must be made at the beginning of the second term.

### BENEFICIARY APPOINTMENTS

The state law provides that one thousand students residing in the state may receive beneficiary appointments entitling them to free tuition. These appointments are apportioned to the various counties according to the population, and are obtained from the County Judge. Those who are unable to obtain beneficiary

appointments from the County Judge may receive them from the President of the University, until the number of one thousand is reached.

*Breakage fee.* Students, working in the laboratories are required to make a deposit to pay for materials and apparatus used and for any breakage or damage. In no course does the deposit exceed \$10. The balance of the deposit is refunded, after making the necessary deductions.

### *Fees in the Department of Fine Arts*

Piano with Mr. Tovey, per term.....	\$27.50
Piano with Mr. Tovey, per month.....	7.50
Piano with Assistant, per term.....	22.50
Piano with Assistant, per month.....	6.00
Voice, Violin, per term.....	22.50
Voice, Violin, per month.....	6.00
Organ, per term .....	27.50
Study of Opera Libretto, per term.....	3.00
Harmony, in class .....	5.00
History of Music, in class.....	5.00
Organ practice, per hour.....	.20
Piano practice, one hour daily, per term....	2.50
Each additional hour daily, per term.....	1.25
Recital fee, admitting to at least two artists' recitals.....	1.50
Diploma fee, for completion of the special course in music.	5.00
A studio fee of two dollars will be charged in all courses in Art except Public School Drawing.	

### EXPENSES

The following estimates, based upon data secured from students recently in attendance, will give some idea of the cost of attending the University for a year:

Clothes, including uniform.....	\$ 20.00	\$ 40.00	\$ 65.00
Board, laundry, etc.....	135.00	180.00	225.00
Books, instruments, etc.....	10.00	15.00	20.00
Other expenses.....	25.00	30.00	35.00
Matriculation and student activities fee.	20.00	20.00	20.00
	<hr/>	<hr/>	<hr/>
	\$210.00	\$285.00	\$365.00

## BOARD AND ROOMS

*Dormitories*

The three men's dormitories provide accommodations for about 250 students.

For rooms in the dormitories, unfurnished, a charge of \$5 a year for each occupant is made. Board, light, heat and laundry work are provided at cost, usually about \$15 a month.

The women's dormitory, Carnall Hall, provides accommodations for about 100 students. The rooms in Carnall Hall are furnished, except linen, towels, etc.

In order to secure a reservation in any of the dormitories, the fee of \$5 must be sent to the Secretary of the University on or before September first.

*Boarding and Lodging in Private Houses.*

Boarding places must be selected from a list of such places as have been approved by the University authorities. Once chosen, boarding places cannot be changed except by consent of the President, in the case of men, or of the Dean of Women, in the case of women.

## DISCIPLINE

The enforcement of discipline is in the hands of the Senate Committee on Discipline and Attendance, the University Council and the chairmen and deans of the colleges.

Students are required to be diligent in the pursuit of their studies and regular in attendance upon classes. The University will not permit students to remain at the University who fail to meet its requirements.

At the beginning of the year a handbook containing the rules and regulations of the University is placed in the hands of each student. Students will be held responsible for the observance of the regulations therein contained.

Students must matriculate and classify if possible during the first three days of the session. Failure to do so may be cause for discipline.



## UNIVERSITY ORGANIZATIONS AND EXERCISES

## CONVOCATION

At three o'clock on Wednesday afternoon of each week of the session the faculty and students assemble in the University auditorium to engage in Convocation exercises. At these meetings helpful addresses are delivered and general University affairs are discussed. Occasional musical and other numbers add variety to the programs.

## THE CHRISTIAN ASSOCIATIONS

During the year 1912-13, 125 men and 100 women were enrolled in the Young Men's and Young Women's Christian Associations. Each association employs a general secretary who gives full time to the work.

Religious meetings for men are held on Sunday afternoons in the Association Hall and on Wednesday evenings. Religious services for women are held on Sundays, and on Wednesdays and Fridays; a series of special evangelistic meetings is held once each year. Courses in systematic Bible study and in modern missions are offered. Within the past year some 100 men and 50 women were enrolled in these courses.

A most helpful feature of the work of the associations is in their interest in new students at the opening of the college year. Students are assisted in securing desirable rooms and boarding places. A bureau of information is conducted for the benefit of all students who need assistance.

Each year the associations issue a Student's Handbook, which gives information about Fayetteville, the University, and the various college organizations and activities.

The Christian Associations stand for spiritual, mental, and physical development. Their mission is to befriend and help those who need friends and help, to apply Christian principles to college life, to train for aggressive religious work—in short, to prepare men and women to go out from the University to become religious leaders, as well as business, social and intellectual leaders.

The University authorities are in hearty sympathy with the organizations and do everything in their power to aid in their work.

Two elective courses in the English Bible are offered for which collegiate credit is given (see page 74).

#### ORGANIZATIONS AUXILIARY TO COURSES OF STUDY

*The Chemistry Journal Club* is composed of students taking the courses in chemistry. At its weekly meetings instructors and advanced students take part in the discussion of articles in the current chemical journals.

*The American Institute of Electrical Engineers, University of Arkansas Branch*, meets regularly on the alternate Tuesdays through the school year, for the presentation of original papers and for discussion of the regular Institute transactions, of which advance copies are received. All students interested in electrical engineering are eligible to membership.

*The American Society of Mechanical Engineers, University of Arkansas Student Section*, meets regularly on the second and fourth Mondays of the month, during the school year. The meetings are devoted to the presentation of original papers and discussion of papers selected from those regularly presented before the American Society of Mechanical Engineers, of which advance copies are received. Occasionally a lecture by some prominent engineer takes the place of the regular program.

*The Agricultural Society* meets weekly to discuss topics of practical and theoretical interest to students of agriculture and current topics of general interest. Occasionally lectures by experts in agriculture take the place of the regular programs.

*The John C. Hanner Geological Club* meets on the second Monday of each month. Its programs consist of papers and occasional lectures on geological topics. Membership in the club is open to students in the courses in geology.

*The Hunkies* is a dramatic club limited to twenty-five members. It meets on alternate Tuesdays throughout the year in the club room, 18 Peabody Hall, for the study of plays, classic and current, and for general information in matters pertaining to the drama and to the theatre. Two plays are produced each year under the direction of Mr. Roger Williams.

*Der Deutsche Verein* meets on alternate Wednesday evenings throughout the school year at the home of Professor Briscoe for

the purpose of conversing in German, learning German customs, and singing German folk songs, etc. All students who have studied German are eligible to membership.

#### LITERARY SOCIETIES

The *Garland*, *Periclean* and *Lee* societies for men meet weekly on Saturday evenings during the school year. The Sapphic Society for women meets on Thursday afternoons.

#### INTERCOLLEGIATE DEBATES

The University is a member of the Pentagonal Debating League, composed of the Universities of Arkansas, Louisiana, Mississippi, Tennessee and Texas. Each institution has two teams which support opposite sides of the question. The affirmative team remains at home and the negative team leaves the state. The contests are held on the first Friday after the first Monday in April of each year. This year (1914-15) Arkansas goes to Tennessee and Louisiana comes to Fayetteville.

On the Monday night following Easter of each year Arkansas debates Oklahoma. The contest this year (1914-15) will be at Norman, Oklahoma.

The Debaters' "A" and one and one-half hours credit are given to each representative of the University on the forum.

The Debating Council, composed of three members from each literary society, has charge of all debates.

#### NATIONAL DEBATING FRATERNITY

The Tau Kappa Alpha, an honor fraternity, whose membership is restricted to intercollegiate debaters and orators, has the Arkansas Chapter in the University.

The aim of the organization is to encourage and reward all meritorious efforts in public speaking.

#### THE GLEE CLUB

The *University of Arkansas Glee Club* is a student musical organization, membership in which is open to men students and is determined by competition.

The *University Dramatic Club* is a student organization membership in which is open to any student interested in the drama.

## STUDENT PUBLICATIONS

There are three publications issued by the student body: *The University Weekly*, devoted to current events in all departments of the University; *The Arkansan*, a literary magazine, appearing monthly; and the *Cardinal*, which is published annually, and gives a history of the college year. The *Weekly* is edited by a board selected from the entire student body; the *Cardinal* is published by the members of the junior class.

## DEGREES—GRADUATION

## DEGREES AND CERTIFICATES

The following degrees are conferred by the departments of the University at Fayetteville:

In the *College of Arts and Sciences*, Bachelor of Arts (B. A.), Bachelor of Science in Chemistry (B. S. C.), Master of Arts (M. A.), and Master of Science (M. S.).

In the *College of Engineering*, Bachelor of Chemical Engineering (B. Ch. E.), Bachelor of Civil Engineering (B. C. E.), Bachelor of Electrical Engineering (B. E. E.), Bachelor of Mechanical Engineering (B. M. E.), and Bachelor of Mining Engineering (B. M. E.). Chemical Engineer (Ch. E.), Civil Engineer (C. E.), Electrical Engineer (E. E.), and Mechanical Engineer (M. E.).

In the *College of Agriculture*, Bachelor of Science in Agriculture (B. S. A.), Bachelor of Science in Home Economics (B. S. H. E.), and Master of Science (M. S.).

A bachelor's degree is conferred on any student who satisfactorily completes the course of study prescribed for the degree by the various colleges, doing either the whole or the last year of his work in residence at the University.

If the student is in residence at the University for one year only, that year's work must be taken in the college from which the degree is expected. The final year of residence work must not be less than the equivalent of sixteen hours for one year.

A candidate for a bachelor's degree must pass in the studies prescribed in his chosen course and must conform to the rules governing the election of studies.

The requirements include three hours of military science and drill for men and two hours of physical training for women. Men excused from the military requirement and women excused from the physical training requirements, must offer instead an equivalent number of hours in other subjects. All women must present an additional hour of credit in some elective.

The requirements for the various degrees and the prescribed courses are given in detail in the announcements of the various colleges.

#### REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS

Before a student is admitted to candidacy for the master's degree he must have received the bachelor's degree from this University or another institution in which the course of study is fully equivalent.

At least one year must intervene between the conferring of the bachelor's and the master's degree.

Candidates are required to pursue a course of study in one major and not more than two minor subjects, aggregating with a thesis sixteen hours, in residence. Fourteen of the sixteen hours must be taken regularly in the class room. A graduate of the University of Arkansas may pursue one-half of his study in absence by correspondence, provided that his undergraduate work is satisfactory to the Dean of the College and the Committee on Graduate Work.

The major subject, occupying with the thesis eight hours, must be at least third year work in a subject in which the candidate has at least six credits.

Six hours of additional work must be selected in not more than two closely related subjects, in each of which the candidate must have received at least six credits.

All work credited toward a master's degree must be done after the corresponding bachelor's degree has been received.

#### REQUIREMENTS FOR THE GRADUATE DEGREES IN ENGINEERING

For candidates doing work in residence at the University the requirements are similar to those for the masters' degrees, save that the amount of work demanded is not less than fifteen hours per week as counted in undergraduate work.



These degrees will also be given to graduates of this University in civil, mechanical, electrical, and chemical engineering who have been in successful practice of their profession for three years, and who present a statement of their work, together with a satisfactory thesis on an approved subject.

#### CERTIFICATES

Certificates are conferred on students who complete the following courses:

In the *College of Arts and Sciences*, the Special Course in Music, the Academic Course in Art.

In the *College of Engineering*, short courses in Civil, Electrical, and Mechanical Engineering.

In the *School of Education*, the Normal Course.

In the *College of Agriculture*, the Normal Course in Home Economics.

### HONORS, SCHOLARSHIPS, PRIZES

#### SCHOLARSHIPS

*University Scholarships.* By authority of the Board of Trustees fifteen Graduate and Undergraduate Scholarships have been established. Graduates of this University or of other universities are eligible for appointment to Graduate Scholarships. Students of this University of senior standing may be appointed to Undergraduate Scholarships. Holders of scholarships are expected to render a certain amount of service in the departments in which they hold scholarships. Graduate Scholars will receive \$150, Undergraduate Scholars, \$125 per year. Appointments to scholarships will be made by the University Council.

*Women's Clubs Scholarships.* The Federation of Women's Clubs of Arkansas offers two scholarships, one for men and one for women. Appointment to these scholarships is determined by a competitive examination conducted by the University.

*Daughters of the Confederacy Scholarship.* The Daughters of the Confederacy of the state have provided a scholarship.

*Elk's Scholarship.* The B. P. O. of Elks has also provided a scholarship.

Further details regarding any of the foregoing scholarships may be had by applying to the President of the University.

## UNIVERSITY HONORS

By a system of honors the University gives official recognition of attainments in scholarship. The honors are Distinctions, Departmental Honors, General Honors, and Honors at Graduation.

*Departmental Honors.* To be eligible for departmental honors a student must pass in at least nine credits in the department with a grade of E. From the students who are eligible for honors in a department, the teaching force of the department shall select the first and second honor graduate. As a basis for this selection, all of the work done in the department shall be considered and general class standing if necessary.

*Class Honors.* Any student who passes in at least fifteen honors of collegiate work and receives a grade of E in not less than twelve hours and ranks not less than F in any course shall receive *class honors*.

*Honors at Graduation.* Any student who makes class honors in both his junior and senior years shall be termed *Honor Graduate*.

All honors shall be published at commencement, and in the catalogue for the following year.

All students who are honor graduates shall have the fact noted in their diplomas.

## PRIZES

*The William Jennings Bryan Prize.* Mr. William Jennings Bryan gave to the University two hundred and fifty dollars, from the interest of which sum a prize is offered annually for the best essay on some topic relating to the problems of government. The contest is open to students who have junior or senior standing, and to special students, with certain restrictions. Further details of the conditions for competition may be had from the professor of economics and sociology.

*The Johnson Prize.* Dr. W. S. Johnson offers a valuable loving cup to be competed for in an oratorical contest open to the members of the literary societies.

*The Brough Debating Medal.* Dr. Charles Hillman Brough, of the department of economics and sociology, offers a medal of

the value of \$20, or \$20 in money, as a prize for excellence in debate, to be contested for by two representatives from each of the literary societies of the University. Two debates are held during the session; one formal, in which the speeches are prepared, and valued at sixty per cent; the other informal, in which the speeches are impromptu, and valued at forty per cent. These debates are designed to train students of the University in the art of forensic speaking, and to promote a friendly rivalry among the literary societies.

# THE COLLEGE OF ARTS AND SCIENCES

## FACULTY

JOHN CLINTON FUTRALL, *President of the University*  
EDGAR FINLEY SHANNON, Ph.D., *Dean of the Faculty of Arts and Sciences*

GEORGE WESLEY DROKE, M. A., *Professor of Mathematics and Astronomy*

FRANK WELBORN PICKEL, M. S., *Professor of Biology*

CHARLES HILLMAN BROUGH, Ph.D., *Professor of Economics and Sociology*

CHARLES GEIGER CARROLL, Ph.D., *Professor of Chemistry*

EDGAR FINLEY SHANNON, Ph.D., *Professor of English*

ANTONIO MARINONI, M. A., *Professor of Romance Languages*

GILES EMMET RIPLEY, M. S., *Professor of Physics*

WALTER MATTHEW BRISCOE, B. A., *Professor of German*

NOAH FIELDS DRAKE, Ph.D., *Professor of Geology and Mining*

HENRY DOUGHTY TOVEY, *Professor of Music*

DAVID YANCEY THOMAS, Ph.D., *Professor of History and Political Science*

JAMES RALPH JEWELL, Ph.D., *Professor of Education and Psychology*

HARRY HARRISON STRAUSS, M. A., *Acting Professor of Ancient Languages*

ROSE BLAND, B. A., *Assistant Professor of Education*

JAMES RICHARD GRANT, B. A., *Assistant Professor of Philosophy*

WALLACE CARL MURPHY, M. A., *Assistant Professor of History and Political Science*

MAX CARL GUENTHER LENTZ, *Associate Professor of German*

BOLLING JAMES DUNN, M. A., *Associate Professor of Mathematics*

HUGH ELLIS MORROW, B. S. A., *Associate Professor of Chemistry*

ARTHUR MCCracken HARDING, B. A., *Associate Professor of Mathematics*

NEIL CAROTHERS, B. A., *Associate Professor of Economics and Sociology*

\*GUSTAVUS GARLAND GRIVVER, M. A., *Associate Professor of English*

CLEMENT TYSON GOODE, M. A., *Associate Professor of English*

KIRTLEY FITCHER MATHER, B. S., *Assistant Professor of Geology*

\* On leave.

JACOB GARRET KEMP, Ph.D., *Associate Professor of Physics*

FRANK CLAYBOURNE HAWKINS, B. A., *Adjunct Professor of Ancient Languages*

ROGER WILLIAMS, M. A., *Instructor in English, Secretary of the Faculty*

JOHN SIDNEY TURNER, B. A., *Instructor in Mathematics*

ROBERT LEE PRYNN WALKER, M. A., *Instructor in English*

JOHN WAINWRIGHT EVANS, B. A., *Instructor in English*

MABEL SANBORN, *Instructor in Education*

KATE WITHERS SIMPSON, *Instructor in Education*

MARY CUMMINGS BATEMAN, *Instructor in Vocal Music*

WILLIE VANDERLINER CROCKETT, *Instructor in Expression*

ELIZABETH GALBRAITH, *Instructor in Art*

EVELYN METZGER, *Instructor in Art*

CLARA MILLER, Ph. B., *Instructor in Physical Education*

MABEL BELL, *Instructor in Piano*

HELEN ADAMS, *Instructor in Piano*

RAMON ADAMS, *Instructor in Violin*

Students who complete the undergraduate courses of the College of Liberal Arts receive the degree of Bachelor of Arts (B. A.) or Bachelor of Science in Chemistry (B. S. C.). The B. A. course is designed to give a liberal education. Much of the course is elective; it will therefore form a proper basis for graduate professional studies in law, in medicine or in preparation for teaching. The B. S. C. course is designed to give training in science, particularly in chemistry.

In addition to the courses that lead to a degree there are certain courses, the completion of which is attested by a certificate from the University, e. g., the normal course and the course in music.

#### ADMISSION

The admission requirements for the college are given in the general statement of the entrance requirements of the University, pp. 19, 20.

#### REQUIREMENTS FOR GRADUATION WITH THE B. A. DEGREE

The following are the requirements for the B. A. degree:

I. *General*. The candidate must meet the University requirements as to residence and registration, and must secure credit in

approved courses in the college amounting to 64 hours. (An hour is one class period per week for one year, or two to three hours of laboratory work per week for one year.)

2. *Prescribed subjects.* Specifically prescribed are: English 1 and English 2, 6 hours for all candidates, and military science, 3 hours, for men, or physical education, music, art, or expression, 3 hours, for women.

3. *Group requirements.* The subjects in the college are grouped as follows:

1. Ancient Languages (Greek, Latin), English, German, Romance Languages (French, Spanish, Italian).

2. Mathematics, Astronomy, Biology, Chemistry, Geology, Physics.

3. Economics, Education, History, Political Science, Philosophy, Sociology.

Group 4 includes courses offered in other colleges of the University, a restricted election of which is permitted.

4. Civil, Chemical, Electrical, Mechanical, and Mining Engineering, Agricultural Chemistry, Agronomy, Animal Husbandry, Entomology, Horticulture, Veterinary Science, Domestic Science, Fine Arts.

In the election of studies the following rules must be observed:

1. Not more than 20 hours may be counted in any one subject, and not more than 40 hours in any group.

2. At the close of the candidate's freshman year, he must select a major subject. In general, the candidate will be expected to offer not less than 12 hours in his major subject. The exact major requirements differ with different departments; statements of the requirements are given in connection with the announcements of the various departments or may be had from the heads of departments.

3. Major subjects may be selected only from Groups 1, 2, and 3.

4. All candidates are required to do 6 hours of work in some foreign language, and must have presented or must complete two



years of entrance work in this language, except that candidates whose majors are in scientific subjects are permitted to present 12 hours of work in modern languages, preferably distributed equally between two languages. Of the 12 hours work in foreign languages required of scientific students, at least 9 hours must be done at the University.

5. Not more than 9 hours may be offered from Group 4.

#### ARRANGEMENT OF COURSES

##### *First Year*

##### *Subjects Prescribed for Freshmen*

The following subjects must be taken during the freshman year: English 1, 3 hours; Foreign language, 3 or 4 hours; Military Science for men, Physical Education for women, 1 hour, and Mathematics 3, 3 hours (by men students); and electives to total 17 hours.

##### *Subjects Open to Freshmen*

The following subjects are unrestrictedly open to freshmen: English 1, French 1, German 1, Greek 1 and 7, Italian 1, Latin A, 1 and 1c, Spanish 1, History 1a, 1b, 11a and 11b, Mathematics 1a, 1b, 2a, 2b, and 3, Biology 1, 2, and 5, Chemistry 1, Geology 1, and Physics 1. Under special conditions a limited number of freshmen will be permitted to elect Economics 1.

##### *Second Year*

The following subjects must be taken during the second year: English 2, 3 hours; Military Science for men, Physical Education for women, 1 hour; Foreign Language, 3 hours of the language chosen in the freshman year; from Group 2, 3 hours; from Group 3, 3 hours; and electives to bring the total to 17 hours.

##### *Third and Fourth Years*

In the third year the only subject required is Military Science, 1 hour. The remaining 16 hours are wholly elective, subject to the approval of the student's major professor and the chairman of the college. In the fourth year, 16 hours of wholly elective work are required, to be chosen with the approval of the major professor and of the chairman of the college.

For requirements for graduation with the M. A. degree, see p. 40.

REQUIREMENTS FOR GRADUATION WITH THE B. S. C. COURSE  
COURSE LEADING TO THE DEGREE OF B. S. IN CHEMISTRY

*First Year*

	Hours per week
Mathematics 1a, 1b, 2a, 2b.....	6
Physics 1 .....	3
Chemistry 1 and Chemistry 5.....	4
English 1 .....	3
German 1 .....	3
Military Science .....	1

*Second Year*

Chemistry 2 .....	3
Chemistry 6 .....	3.5
Physics 2 and 3 .....	4
French 1 .....	3
Drawing .....	1
Elective .....	3.5
Military Science .....	1

The electives are to be selected from the following: Chemistry 3 and 3l; English 2, 13; German 2; Mathematics 4a, 4b; Biology 1; Geology 1a, 1b; Economics 1; History 1a, 1b; Shop-work.

*Third Year*

Chemistry 3 or 4 .....	2-3
Chemistry 7 .....	3.5
Chemistry 11 .....	2
Chemistry 15 (second semester).....	2
Elective .....	8-11
Military Science .....	1

The electives are to be selected from the following: Chemistry 3l or 4l; Mathematics 7 or 8; Geology 5a, 5b; Biology 4; German 10; Physics 7b.

*Fourth Year*

Chemistry 8 .....	3.5
Chemistry 14b .....	2
Chemistry 15 .....	2
Chemistry 18 (Journal Meeting).....	
Thesis (Chemistry 17) .....	
Elective .....	9-11

The electives are to be selected from the following:

Chemistry 4, 4b, 9, 10, 12a, 16; Physics 4, 9; Biology 7, 8; Geology 5b, 6a; Mathematics 11a; English 4a, 4b; History 4a, 4b; **Economics 2.**

Electives other than those indicated may also be offered, subject to the approval of the student's adviser and the chairman of the college.

### THE SCHOOL OF EDUCATION

The State University of Arkansas is an integral part of the public school system of the state. As contemplated in its establishment, the work in the University is based upon the preparation afforded by the high schools of the state, and students coming from accredited high schools are admitted to the undergraduate and professional courses upon the presentation of the proper certificates.

The Board of Trustees of the University have authorized the establishment of a separate division of the University to be known as the School of Education. The newly erected Peabody Hall, recently completed at a cost of more than \$40,000, will accommodate the professional work of the School. The School of Education will have a separate faculty consisting of a dean, teachers of the various professional branches, trained critic teachers in the University Training School, and instructors in other departments and colleges of the University represented in the curriculum of the School.

The purpose of the School of Education will be to bring together and correlate all the forces of the University which contribute in a professional way to the preparation of educational leaders in teaching and supervision of whatever grade, whether **rural, elementary, secondary, or executive.**

The curriculum of the School will be based upon the assumption that teachers should have first of all, and fundamental to all other preparation, a broad and liberal education; second, that they should be the masters of some special subject which they expect to teach; and third, that this training should be supplemented by professional education which shall give a knowledge of the minds of the pupils to be taught, the problems to be met, and always with that most important of all features of teacher-training, a thorough course in practice teaching under skilful **critic teachers.**

## SPECIAL EQUIPMENT FOR PEDAGOGICAL TRAINING

Peabody Hall, the newest and most modern building on the campus, is entirely used for the work in Education. It is a large and commodious building of three stories, with its more than 30 rooms planned especially for adaptation to the work of training teachers. Here are rooms for Manual Training and Home Economics, a large assembly room, rooms for the Training School, etc. A large and well-lighted reading room is well furnished and is supplied with various professional books and magazines.

## SPECIAL COURSES OFFERED BY THE SCHOOL OF EDUCATION

The School of Education offers special courses, the completion of which is attested by a certificate from the University (the certificate of Licentiate of Instruction). The certificate is a license to teach in accordance with a state law which provides:

"That the diplomas from the teachers' training department of the University of Arkansas shall be equivalent to a teacher's professional license, which shall entitle the holder to teach in any public school in the state of Arkansas for a period of six years from and after the date of issue, and at the expiration of the said diploma may be converted into a life certificate, provided the character of the work done by the holder thereof and his or her moral character meet with the approval of the State Superintendent of Public Instruction of the State of Arkansas."

This certificate is also granted to those graduates of the College of Arts and Sciences who take major work in Education and complete not less than 16 hours work in that department, together with other work in the College of Arts and Sciences. A certain part of these 16 hours is prescribed, the remainder being elective.

The admission requirements for these courses are given in the statement of the entrance requirements of the University, pp. 20-27. Education 1a and 20b may be elected by any freshman in the College of Liberal Arts, and must always precede other courses in Education, Psychology or Philosophy.

It is urged upon all students who expect to become candidates for the L. I. degree, and all who are majoring in Education, to do their practice teaching just as late in their course as

possible. Course 24 is worth much more to a Junior than to a sophomore, and more to a senior than to either of the others.

The requirements for the course leading to the certificate of Licentiate of Instruction are as follows:

#### NORMAL COURSE

##### *First Year*

	Hours per week
English 1 .....	3
Education 1a and 20b.....	3
Education 22a and 23b .....	2
Electives .....	10

##### *Second Year*

Education 24 .....	4
Agriculture .....	3
Electives .....	11

Agriculture may be elected during the first year, if desired.

Twelve hours of credit in Education, inclusive of the courses in Education 1a and 20b are required for the L. I. degree. Sixteen hours in Education are required for the A. B. degree.

No student will be recommended to a teaching position in a high school who has not credit in the Psychology of Adolescence (Psychology 8a).

No student will be recommended for a position in school supervision who has not credit in School Management (Education 27a).

History 12 is strongly recommended to all who are planning to teach in the grades, as is also the Teachers' Course in Physical Culture, for which 1 hour of credit is given.

All work in the foregoing course may be counted as a part of the 64 hours required for the A. B. degree.

#### COURSE IN HOME ECONOMICS LEADING TO CERTIFICATE OF LICENTIAE IN INSTRUCTION.

##### *First Year*

	Hours per week
English 1.....	3
Education 1a and 2b .....	3
Education 3a and 3b.....	2

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Home Economics 30a and b.....	2
Home Economics 10a and b.....	3
Chemistry 1 .....	3
Physical Education .....	1

### *Second Year*

English 11 .....	3
Home Economics, 1a and b.....	2
Home Economics 2.....	4
Home Economics 20a and b .....	3
Electives .....	5

### SPECIAL COURSES OFFERED IN THE DEPARTMENT OF FINE ARTS

The Department of Fine Arts offers special courses, the completion of which is attested by a diploma or a certificate from the University.

The purpose of these courses is to give opportunity to persons who do not desire to become candidates for degrees, but wish to do special work in music, art, and expression, together with a judicious amount of work of a cultural nature, in preparation for teaching or as a basis for further study.

The admission requirements for these courses are given in the statement of the entrance requirements of the University, pp. 20-21.

### SPECIAL COURSE WITH MUSIC (PIANO, ORGAN, VOICE, VIOLIN), LEADING TO A DIPLOMA

The requirements for a diploma in music from the Department of Fine Arts includes the following work in other departments of the College of Arts and Sciences:

English 1 and 2, six hours; Modern Language, six hours; History 1a and 1b or Economics 1, three hours.

In music, definitely required are: Harmony 1 and Harmony 2, and History of Music 1.

For the requirements in Piano, Violin, Voice, etc., no definite number of hours can be stated; the applicant must show the attainment of sufficient knowledge, technique and ability. In general this will demand four to six years of work. Finally, in addition to the study of the major instrument, the candidate



must spend one year in the study of some other instrument, or of voice, and be credited by the Director.

Students entering the foregoing course are required to present 14 entrance units, two of which may be in music.

#### SPECIAL COURSE WITH ART LEADING TO A CERTIFICATE

##### *First Year*

English, three hours; Foreign Language, three or four hours; Biology, three hours; History, three hours; Art, four hours.

##### *Second Year*

English, three hours; Foreign Language, three hours; Economics, three hours; Biology, three hours; Art, including History of Art, five hours.

##### *Third Year*

English, three hours; Psychology, three hours; Economics, three hours; Art and History of Art, six hours; Elective, three hours.

##### *Fourth Year*

English, three hours; Ethics, three hours; Art and History of Art, six hours; Elective, five hours.

#### SPECIAL COURSE WITH EXPRESSION, LEADING TO A CERTIFICATE

##### *First Year*

English, three hours; Foreign Language, three hours; Economics or History, three hours; Science, three hours; Expression, five hours; Physical Education, one hour.

##### *Second Year*

English, three hours; Foreign Language, three hours; History or Economics, three hours; Science, three hours; Expression, five hours; Physical Education, one hour.

##### *Third Year*

English, three hours; Psychology, three hours; Foreign Language, three hours; Science, three hours; Expression, five hours; Physical Education, one hour.

##### *Fourth Year*

Ethics, three hours; Foreign Language, three hours; Expression, five hours; Physical Education, one hour; Elective, six hours.

## LABORATORIES AND EQUIPMENT.

*Biological Laboratory.* The biological laboratory is located on the third floor of University Hall, and has accommodation for about forty students. The laboratory is furnished with work-tables, a sink, and the necessary gas fixtures for incubators, sterilizers, etc.; also an aquarium for keeping aquatic animals and plants for observation and study. The equipment in apparatus consists of compound microscopes, dissecting microscopes, microtomes, and such other apparatus and chemicals as are needed for the practical work in biology. There is a collection of insects, and also apparatus for collecting, drying, preserving and mounting insects. The laboratory has a number of skeletons of different animals, and models and charts for teaching plant and animal anatomy.

*Chemical Laboratories.* On the first floor of the Chemistry Building are laboratories for quantitative and qualitative analysis, organic chemistry, physical chemistry; a balance room; and a library. On the second floor is a large lecture room and a general laboratory for first year students. In the basement are store rooms and laboratory for assaying. The various laboratories are provided with work-tables, sinks, hoods, water, and gas. The department is provided with apparatus sufficient for the present needs.

*Physical Laboratory.* The physical laboratory is located in Engineering Hall. It is equipped with modern instruments in quantity sufficient for the laboratory work of the courses in physics.

*Geological Laboratories.* The department of geology occupies nearly all of the fourth floor of University Hall. The department is equipped with maps, relief maps, minerals and rock specimens; and with aneroid barometers, compasses, hand-levels, pedometers, etc., for field work. There is also a well equipped laboratory for determinative mineralogy.

*Equipment of the Department of Military Science and Tactics.* The equipment of the department consists of six hundred Krag-Jorgensen rifles; eighteen gallery rifles, 1903 Springfield model; five hundred sets of leather infantry equipments; signal flags; non-commissioned officers' swords; and ammunition furnished by the National Government. National colors, cadet officers' swords, and a set of band instruments have been purchased by the University.

# DESCRIPTION OF COURSES OFFERED IN THE COLLEGE OF ARTS AND SCIENCES

Courses designated by a numeral followed by the letter *a* are given during the first semester.

Courses designated by a numeral followed by the letter *b* are given during the second semester.

Courses designated by a numeral alone are continued through both semesters. Credit in one semester's work of such courses will not be granted.

Courses designated by a numeral followed by the letter *c* are language composition courses.

Courses designated by a numeral followed by the letter *l* are laboratory courses.

The numeral in parentheses after the name of a course indicates the number of hours of credit given for completion of the course.

## ANCIENT LANGUAGES

ACTING PROFESSOR STRAUSS, ADJUNCT PROFESSOR HAWKINS.

### LATIN

For students entering with only two units in Latin (see page 25 of this catalogue) course A is provided. Latin 1 is intended for those who offer for entrance three units, but may be taken by well-prepared students who offer only two units.

Students presenting four units of Latin for entrance will be admitted to Latin 2. All students taking this course are advised to take Latin 2c at the same time.

*Latin 1c should be taken by all students in course A or course 1. No credit for any college course in Latin will be given until the student has satisfactorily completed course 1c, or has presented evidence that he has completed an equivalent course in the preparatory school or elsewhere.*

Students who desire recommendations as teachers of Latin

in high schools must have credit for Latin 2c, 2, and not less than three hours of more advanced work.

A. CICERO'S ORATIONS AND LETTERS (3)—Six orations and selections from the letters; a review of the forms; drill in the syntax of the noun and verb. (*No credit will be given for this course until course 1c, or the equivalent has been passed.*) M. W. F. 1. ADJUNCT PROFESSOR HAWKINS.

1. VERGIL'S ÆNEID (3)—Six books of Vergil's Æneid. Due attention will be paid to forms and syntax, but the chief aim in this course will be to enable the student to arrive at an appreciation of the poem as literature. The dactylic hexameter will be studied and read. (*No credit will be given for this course until course 1c, or the equivalent has been passed.*) M. W. F. 2.

ADJUNCT PROFESSOR HAWKINS.

1c. PROSE COMPOSITION (1)—An elementary course. Required of all students in Latin A or Latin 1 who have not passed its equivalent. Bennett's *Latin Composition* will be completed.

ADJUNCT PROFESSOR HAWKINS.

2. CICERO, OVID, AND TERENCE (3)—Cicero's *De Amicitia*; Ovid, selections; Terence, the *Phormio*; sight reading; Roman private life. *Prerequisite*: Latin 1c and either Latin A or Latin 1. M. W. F. 3.

ACTING PROFESSOR STRAUSS.

2c. PROSE COMPOSITION (1)—Nutting's *Supplementary Latin Composition*. *Prerequisite*: Latin 1c. Th. 3.

ACTING PROFESSOR STRAUSS.

3. ROMAN PUBLIC AND PRIVATE LIFE (3)—Selections from Cicero, Pliny, Juvenal and Martial. *Prerequisite*: Latin 2.

ACTING PROFESSOR STRAUSS.

3c. PROSE COMPOSITION (1)—The translation of connected passages of idiomatic English into idiomatic Latin. *Prerequisite*: Latin 2 and 2c. W. 4.

ACTING PROFESSOR STRAUSS.

4. HORACE AND TACITUS (3)—Horace, *Odes and Epodes*; Tacitus, *Annals*; parallel and sight reading; the metres of Horace. *Prerequisite*: Latin 2 and 2c. T. Th. 4; W. 2.

ACTING PROFESSOR STRAUSS.

5. ROMAN POETRY (3)—The reading of selected portions of Roman poets from Plautus to Juvenal. An attempt will be made to secure for the student a good general review of the whole field of Roman poetry within the limits stated. *Prerequisite:* Latin 2c, and 3 or 4.

ACTING PROFESSOR STRAUSS.

6. HORACE AND VERGIL (2)—Horace, *Satires and Epistles*; Vergil, *Aeneas and Georgics*; History of Roman Literature. *Prerequisite:* Latin 2c and 3 or 4.

ACTING PROFESSOR STRAUSS.

#### GREEK

Courses 1 and 2 are designed to give students who do not present entrance credits in Greek an opportunity to begin the study of the language. Those having an entrance credit of three units will be admitted to Greek 3.

1. ELEMENTARY COURSE (1)—White's *Beginner's Greek Book*, with selections from Xenophon's *Anabasis*. A thorough mastery of the forms and constructions given in this book is required. M. T. W. Th. 4.

ADJUNCT PROFESSOR HAWKINS.

2. XENOPHON AND LYDIE (1)—This course is intended to familiarize the student with all the ordinary Attic forms and constructions; frequent exercises in oral and written translation of English into Greek, based upon the text read, are given; there is some practice in sight reading. *Prerequisite:* Greek 1. M. W. Th. F. 6.

ADJUNCT PROFESSOR HAWKINS.

3. HOMER AND PLATO (3)—Systematic study of the grammar; prose composition; Greek literature; sight reading. *Prerequisite:* Greek 2. M. 4; Th. F. 2.

ACTING PROFESSOR STRAUSS.

4. GREEK HISTORIANS (2)—Selections from Herodotus and Thucydides. *Prerequisite:* Greek 3.

ACTING PROFESSOR STRAUSS.

5. ADVANCED PROSE COMPOSITION (1)—Weekly written exercises. *Prerequisite:* Greek 3.

ACTING PROFESSOR STRAUSS.

6. THE ATTIC DRAMA (3)—Readings from Æschylus, Euripides, Sophocles, and Aristophanes. *Prerequisite:* Greek 3.

ACTING PROFESSOR STRAUSS.

7. NEW TESTAMENT GREEK (3)—A course for beginners. This course is designed to secure for those who have never studied Greek a reading knowledge of the New Testament. No further attention will be paid to forms and syntax than is essential. The second term will be devoted to reading the New Testament, and the work of this term may be taken by any student who is prepared for it, and credit will be given.

ACTING PROFESSOR STRAUSS.

## BIOLOGY

PROFESSOR PICKEL, MR. SCHWARTZ.

The courses in biology have been arranged to meet the needs of three classes of students; those who desire to become acquainted with the fundamental principles of plant and animal life; those who contemplate the study of medicine; and those who wish to go more thoroughly into the study of biological science to obtain the technical training necessary for subsequent investigation or for teaching.

Students who make biology their major are required to choose from courses 1 or 2, 3, 4, 5, 6, 7 or 8 and 9, 11 or 12.

Courses 1 or 5, 4, 6, 7, 8 or 9 are prescribed for students preparing to study medicine. Credit may be given for one term's work in 1, 3a, 3b, 5, 11a, 11b.

1. GENERAL BIOLOGY (3)—This course serves as an introduction into the whole field of biological science. Types of plants and animals will be dissected and studied in the laboratory, and the essential truths of biology emphasized. The first semester is devoted to the study of animals, the second to the study of plants. One recitation and laboratory, four hours per week throughout the year. Tu. Th. 6 and 7. F. 6.

MR. SCHWARTZ.

2. BOTANY (3)—In this course special attention is paid to the morphology, physiology, and ecology of plants, but due attention is given in the second semester to the systematic classification of plants, and each student is required to collect and



write a technical description of a certain number of plants. The geological history of plants and the origin of cultivated plants will be briefly considered. Field work, when practicable, will form an important feature of the course. Recitation and laboratory work six hours per week throughout the year. M. W. 6 and 7; F. 7.

MR. SCHWARTZ.

3a. **BIOLOGY (3)**—Plant morphology. Lectures and laboratory work on the structure and life histories of representative plants from the main groups. Five hours per week. *Prerequisite:* Biology 1 or 2.

MR. SCHWARTZ.

3b. **BIOLOGY (3)**—Plant physiology. The fundamental physiological processes of plants will be considered by means of lectures, demonstrations and individual laboratory work. Five hours per week. *Prerequisite:* Biology 1 or 2.

MR. SCHWARTZ.

4. **BACTERIOLOGY (4)**—An introduction to the subject and instruction in laboratory technique: the preparation of nutrient media, the characteristics of bacteria, the kind and effects, isolating and keeping pure cultures, microscopical preparations, the study of bacteria found in soil, in water and in air; study of pathogenic forms and their relation to disease. One lecture and six hours' laboratory work per week throughout the year. *Prerequisite:* Chemistry 1, Biology 1. M. 1, Tu. W. F. 2 and 3.

PROFESSOR PICKEL.

5. **GENERAL ZOOLOGY (3)**—A general course in invertebrate and vertebrate morphology. Attention will be given to the fundamental facts of zoological science and the laws of development, heredity, variation, correlation, etc. In connection with the laboratory work in the course, instruction will be given to such students as desire to learn methods of preparing bird skins and mammal skins for laboratory and museum specimens. Field work, when practicable, will form an important feature of the course. One recitation and four hours' laboratory work per week throughout the year. M. F. 3 and 4; W. 5.

PROFESSOR PICKEL.

6. **COMPARATIVE ANATOMY OF VERTEBRATES (3)**—Recitations and demonstrations dealing with the comparative anatomy of

acrania, cyclostomes, sharks, fishes, amphibians, reptiles, birds and mammals. Laboratory work on selected types of the different groups. One recitation and four hours' laboratory work per week throughout the year. *Prerequisite*. Biology 1, or Biology 5. M. 2, W. F. 1 and 2. PROFESSOR PICKEL.

7. ANIMAL HISTOLOGY AND EMBRYOLOGY (5) —This course is offered to students intending to study medicine, but is open to any student who has completed Biology I. It consists of instruction in histological and embryological methods of technique to acquaint the student with the principles of histology and embryology. Two lectures and six hours' laboratory work per week throughout the year. *Prerequisite*. Biology 1 or 2. Tu. Th. 1, W. F. 2, 3, 4. PROFESSOR PICKEL.

8. PHYSIOLOGY (4) —This course is intended for students who desire a general knowledge of physiology and personal hygiene of the human body. It is especially adapted for teachers and also recommended for students of sociology and psychology. Two recitations and four hours' laboratory work per week throughout the year. *Prerequisite*. Elementary Physiology. M. W. 2 and 3, and Tu. Th. 1. PROFESSOR PICKEL.

9. PHYSIOLOGICAL CHEMISTRY (4) —The physiology of foods, digestion, and nutrition; the blood circulation and respiratory mechanism; the excretions, and analysis of urine; functions of brain and spinal cord; physiology of nerve and muscle. Two lectures and four hours' laboratory work a week throughout the year. *Prerequisite*. Chemistry 1 and Biology 8. M. and F. 2, PROFESSOR PICKEL.

10. NATURE STUDY (2) —A special course in nature study, its aim, methods, etc., and systematic science teaching will be offered to students who expect to teach. Two lectures per week throughout the year. *Prerequisite*: Biology 1. PROFESSOR PICKEL.

11a. GENERAL HYGIENE (3)—Lectures and assigned readings dealing with personal and public hygiene. The subject is considered from a general rather than a technical standpoint and is open to all junior and senior students in the University. First semester; one and a half hours' credit; no laboratory. PROFESSOR PICKEL.

11b. BIOLOGY (3)—Theoretical Biology. The aim of this course is to acquaint the student with some of the broader and more general problems of biology, such as evolution, heredity, eugenics, etc. Three hours per week. No laboratory work. Second semester.

MR. SCHWARTZ.

## CHEMISTRY

PROFESSOR CARROLL, ASSOCIATE PROFESSOR MORROW.

The department of chemistry offers a special course leading to the degree of B. S. in Chemistry (see pp 45, 46 for an outline of this course) which may be pursued in preparation for work in analytical chemistry, or as a basis for graduate study in chemistry or medicine.

For a major in chemistry not less than 15 hours of work in chemistry must be done. The character of the work will depend upon the student's purpose. For those who are preparing to teach chemistry in the high school, Chemistry 1, 2, 3, 3a, 6, 11, 11I are required and courses 12a and 15 are recommended. The student will also be expected to pursue certain courses in physics, mathematics and education. For students who are preparing for the study of medicine, Chemistry 1, 2, 3, 3a, 6, and 11 are prescribed and other courses are recommended, together with the work in biology, physics, and modern languages. For students who are preparing for graduate work in chemistry, Chemistry 1, 2, 3, 3I, 4, 4I, 5, 6, 11, 11I, and 15 are prescribed. In addition the student will be expected to do much work in physics, mathematics and modern languages.

*Prerequisites* Elementary (preparatory) physics, or its equivalent is prerequisite for admission to Chemistry 1. Chemistry 1 is prerequisite to all other courses in chemistry.

1. ELEMENTARY CHEMISTRY (3-4)—Lectures and recitations two or three hours a week; laboratory exercises one afternoon a week.

PROFESSOR CARROLL.

ASSOCIATE PROFESSOR MORROW.

2. GENERAL INORGANIC CHEMISTRY (3-4)—Lectures and recitations three hours per week. Smith's *General Inorganic Chemistry* is the text-book used. Three hours of work are required; an additional hour is optional.

PROFESSOR CARROLL.

21. LABORATORY EXERCISES (1-2)—To accompany Chemistry. Smith's *Laboratory Outline of General Chemistry* is used as a basis for the work.

PROFESSOR CARROLL.

3. ELEMENTARY ORGANIC CHEMISTRY (2)—Lectures and recitations twice a week. Moore's *Outlines of Organic Chemistry* is the text-book used. *Prerequisite*: Chemistry 1.

ASSOCIATE PROFESSOR MORROW.

31. LABORATORY EXERCISES IN ORGANIC CHEMISTRY (1-2)—To accompany Chemistry 3.

ASSOCIATE PROFESSOR MORROW.

4. ADVANCED ORGANIC CHEMISTRY (3)—Lectures and recitations three hours per week.

ASSOCIATE PROFESSOR MORROW.

41. ORGANIC PREPARATIONS (1-2)—Exercises in organic chemistry, with the manuals of Gattermann, Levy, and Fischer as a basis. This course should be taken in connection with Chemistry 4.

ASSOCIATE PROFESSOR MORROW.

5. QUALITATIVE ANALYSIS (2-3)—One lecture or conference per week, with laboratory work during either semester or throughout the year.

PROFESSOR CARROLL.

ASSOCIATE PROFESSOR MORROW.

6. QUANTITATIVE ANALYSIS (2-5)—One lecture or conference per week with laboratory work, for one semester or during the year. The credit given will depend on the quality of the work and the number of determinations made. The course will be varied to suit the needs of individual students.

PROFESSOR CARROLL.

7. QUANTITATIVE ANALYSIS (2-5)—Occasional lectures and conferences. More complicated gravimetric and volumetric processes of analysis. Credit determined as for Chemistry 6.

PROFESSOR CARROLL.

8. QUANTITATIVE ANALYSIS (2-5)—A continuation of Chemistry 6 or Chemistry 7. The work done will be varied to suit the needs of the student. Engineering students may perform exercises in technical gas analysis, the analysis of fuels, oils, etc. *Prerequisite*: At least one and one-half hours of Chemistry 5 and 6.

PROFESSOR CARROLL.

9. **WATER ANALYSIS (2-3)**—A course in the methods of sanitary and technical water analysis, primarily for engineering students. The discussion and interpretation of results of the various analyses will be illustrated in occasional lectures and conferences. *Prerequisites:* At least 1½ hours of Chemistry 5 and of Chemistry 6. PROFESSOR CARROLL.

10. **Physical-Chemical Analysis (2-5).** Quantitative analysis by desintegrants. Laboratory exercises with constant lectures during the year or either semester. PROFESSOR CARROLL.

11. **PHYSICAL CHEMISTRY (3)**—Lectures three hours per week for one semester, or two hours a week for both semesters. *Prerequisite:* Chemistry 1 and a certain amount of Chemistry 5 and 6; Mathematics 1a and 1b; Physics 1.

11. LABORATORY EXPERIMENTS IN PHYSICAL CHEMISTRY (2-3)—  
To accompany Chemistry 11. PROFESSOR CARROLL.

120. *Thermodynamics*. Two hours of lectures and conferences and three hours of practice per week. Designed for prospective high school teachers. *Prerequisites*: Chemistry 1, 2, 3, 5, 6, 11.

PROFESSOR CARROLL.

104. *For two semesters.* (a) Elementary theoretical and applied electrodynamics. Lectures and laboratory exercises.  
**PROFESSOR CARROLL.**

10) History of Chemistry. 11) Lectures, assisted readings, and reports. PROFESSOR CARROLL.

1. Chemical education. 2. Problems and discussions two hours per week. Articles in German and French chemical journals are the basis of the work. PROFESSOR CAMPBELL.

16. **QUALITATIVE AND QUANTITATIVE SPECTRAL ANALYSIS AND CHEMISTRY (3)**—One lecture per week and laboratory exercises in spectral analysis and chemistry during other semester. Kross' *Fluorimetric and photoluminescence analysis* and Farnham's *The qualitative analysis of organic compounds* will be used for reference. *1,2,4-triazole*, *Chemistry 5*, *Chemistry 6*.

17. INDUSTRIAL CHEMISTRY (3)—Lectures, recitations, assigned readings, and reports. *Prerequisite:* Chemistry 2, 4, 11.

ASSOCIATE PROFESSOR MORROW.

18. RESEARCH WORK—Problems in research will be given to graduate students and to others competent to undertake such work. A reading knowledge of German and French is indispensable.

PROFESSOR CARROLL.

19. JOURNAL MEETING (1)—The instructors and advanced students of the department meet once a week for discussion of articles in the current chemical journals.

## ECONOMICS AND SOCIOLOGY

PROFESSOR BROUGH, ASSOCIATE PROFESSOR CAROTHERS.

The courses offered in this department are designed to give instruction in the fundamentals of economic theory and the problems of current economic, social, and public interest, and to prepare students for the duties of citizenship and participation in the professions of law, politics, journalism, financing and teaching—in short, for professional and business careers.

*Economics 1 is a prerequisite to all courses except 2, 7, 9a and 10. Courses 6, 7, and 10 are open to Juniors and Seniors only.*

*Credit may be granted for one semester's work in 1, 2, 3, 5, 7, 8, 9, and 10.*

1. PRINCIPLES OF ECONOMICS (3)—Text-books: Bullock's *Introduction to the Study of Economics*, and Ely's *Outlines of Economics*, with assigned reading amounting to seventy-five pages in carefully selected works on economics outside the text-books. Sections: M. 1, Tu. 2, Th. 2; M. W. F. 2; M. W. F. 3; M. W. F. 4.

PROFESSOR BROUGH.

ASSOCIATE PROFESSOR CAROTHERS.

2. BUSINESS LAW (3)—In this course a study is made of the laws of Arkansas, the law of contracts, bills, checks, and notes, agency and other elements of business law. Text-books: Hufcut's *Elements of Business Law*, Hufcut on *Agency*, Harriman on *Contracts*. Tu. 6, W. 1, F. 1.

PROFESSOR BROUGH.

3a. RAILWAY TRANSPORTATION (3)—The railway systems of the United States and foreign countries; railroad geography, rate-



making and government control and regulation are considered. Text-books: Johnson's *American Railway Transportation*, supplemented by assigned reading and reports.

3b. MONEY AND BANKING (3)—The theory of money, banking and credit is considered, and current financial problems and practical banking are stressed. Text-book: White's *Money and Banking*. M. 5, Tu. 2, Th. 2.

ASSOCIATE PROFESSOR CAROTHERS.

4. INSURANCE (3)—A thorough study is made of the principles of life, fire, accident and marine insurance, of insurance policies, and of the law of insurance. Text-books: Alexander's *Life Insurance Company*, and Huebner's *Property Insurance*, supplemented by assigned readings. M. W. F. 6.

ASSOCIATE PROFESSOR CAROTHERS.

5a. FINANCIAL HISTORY OF THE UNITED STATES, TAXATION AND PUBLIC FINANCE (3)—A thorough investigation is made of the financial history of the United States, and an intensive study is made of the problems of taxation and financial administration. Text-books: Dewey's *Financial History of the United States*, and Seligman's *Essays in Taxation*, supplemented by assigned readings.

5b. ECONOMIC HISTORY OF THE UNITED STATES (3)—A comprehensive study is made of the history of our industrial evolution. Text-book: Bogart's *Economic History of the United States*. M. 6. Tu. 4. Th. 4.

PROFESSOR BROUGH.

6. SOCIALISM AND SOCIAL REFORM (3)—A thorough study is made of the economics and politics of the Socialist movement, with a consideration of the practical problems of social reform. Text-book: Ely's *Socialism and Social Reform*. Tu. Th. 6.

ASSOCIATE PROFESSOR CAROTHERS.

7. SOCIOLOGY (2)—In this course the fundamental facts of social institutions are outlined, and a detailed study is made of the chief social problems of the present day. Text-book: Wright's *Practical Sociology*, supplemented by assigned readings on the family, population, immigration, etc. Tu. Th. 7.

ASSOCIATE PROFESSOR CAROTHERS.

8. ECONOMIC PROBLEMS (3)—Lectures, debates and discussions of the tariff, monopoly, labor, railroad, government owner-

ship, central bank, income tax, injunction, land reform and prohibition problems. One period each week is devoted to lectures; one to debates by members of the class, and one to discussions and reports in class. Text-books: Tarbell's *Tariff in Our Times*, and *Intercollegiate Debates*, Vol. 21, *The South Mobilizing for Social Service*, supplemented by assigned readings. M. Tu. Th. 5.

PROFESSOR BROUGH.

9a or 9b. **ENGINEERING LAW** (3)—Elective for Juniors and Seniors in the courses in Engineering. This course makes a study of the legal questions involved in the work of the engineer. Text-books: Watt's *Engineering and Architectural Jurisprudence*, and Clark's *Architect, Owner and Builder before the Law*. M. W. F. 3.

PROFESSOR BROUGH.

10. **ECONOMY LAW** (3)—A study of law with special reference to real estate, corporations, injunctions and evidence. Text-books: Walker's *American Law*, and *Greenleaf on Evidence*, and *Arkansas Reports*. Tu. 3. W. 5. F. 3.

PROFESSOR BROUGH.

## EDUCATION.

PROFESSOR JEWELL, PROFESSOR TORRELYSON, ASSISTANT PROFESSOR BLAND, ASSISTANT PROFESSOR GRANT, MISS SANBORN,

MRS. SIMPSON, MISS CHEEVER.

The courses of the Department of Education are primarily for the professional training of teachers for elementary or secondary school work. The courses offered afford a study of the principles and processes involved in education and give practical training in the art of teaching.

*The Training School*—A training school for teachers forms a necessary part of the work of the Department of Education. In the training school, students specializing in the department do practice teaching under the supervision of experienced critic teachers.

In the new Peabody Building ample provision has been made for the training school. Rooms are provided where children doing work of both elementary and high school character will be taught. A pupil from any county in Arkansas will be admitted to any class in the University Training High School who has entirely exhausted the school privileges of his home community,

but not otherwise, except on the recommendation of his principal, or on examination. Pupils seeking admission to the Training High School must be at least 15 years of age, and of good moral character.

In the second year of the normal course, candidates for the L. I. certificate are required to do observational and teaching work one hour each day throughout the year. The work will be so selected as to give preparation and practice in the particular kind of teaching that the candidate proposes to follow. Except in very exceptional cases these courses should not be done before a student's Junior year, and should always be delayed until his Senior year when possible.

1A. GENERAL PSYCHOLOGY (3)—This course is a prerequisite to entrance into the School of Education of every State University, is an unvarying essential in the preparation of a teacher, and its content is necessary to success in all public life. Only the simpler aspects of mental life are dealt with. The student will not only be introduced to the field of General Psychology, but will be helped to ground himself in the fundamentals of the subject and to acquire a right attitude toward human behavior in general. This course may be elected by freshmen. Text-book: Colvin and Bagley's *Human Behavior*.

2A. ADVANCED PSYCHOLOGY (3)—This course is intended to serve either as a part of a liberal education or as a preparation for the study of education, law and medicine. The subject is pursued as a science. The general principles of the thought process are emphasized.

3. EDUCATIONAL PSYCHOLOGY (3)—The following subjects of vital importance to the teacher are considered: Sources of Interest, Instincts, Habit, Moral Training, Memory, Thinking, Attention, Imagination, and "Transfer of Training."

6. GENETIC PSYCHOLOGY (3)—An intensive study of the development of the mind. The arguments for and against the Recapitulation Theory are considered and then Child Psychology, leading toward the Psychology of Adolescence. In stating the principles of Child Psychology, a careful interpretation is made of hereditary and environmental influences in their bearing upon education in the home and school. Lectures and text-book. **Prerequisite: Psychology 1 and 2.**

7. SOCIAL PSYCHOLOGY (3)—This course will give an insight

into present social problems by showing how consciousness has been developed in the home, school, neighborhood and society. Among the topics studied are: Public Opinion, Custom, Imitation, Psychology of Leadership, Conflict, Discussion, Compromise, Mob Mind, Social Will, Communication and the Crowd. Text-book: Cooley's *Social Organization*.

8a. PSYCHOLOGY OF ADOLESCENCE (3)—This is a study of the important physical, mental and moral changes which are natural to adolescence, and will be of special interest to all who have to deal with boys and girls of high school age. Much attention will be paid to laying the foundation for the pedagogy of secondary instruction. Text-book: Hall's *Youth*. *Not offered during 1914-15.*

9b. ABNORMAL PSYCHOLOGY (3)—This course treats of the psychological conditions and mental phenomena of sleep, dreams, aphasia, insanity, illusions, etc. Lectures, discussions and reports. Texts: Barrett's *Psychical Research*, Hyslop's *Introduction to Psychological Research*, and Coriat's *Abnormal Psychology*. *Not offered during 1914-15.*

20b. HISTORY OF EDUCATION (3)—Educational tendencies rather than men will be the content of this course, and at every point stress will be laid upon the connection between educational theory and actual school work in its historical development. Text-book: Monroe's *Briefer Course in the History of Education*.

21a. PHILOSOPHY OF EDUCATION (3)—Education considered from the standpoint of (1) biology, (2) neurology, (3) psychology, (4) anthropology, and (5) sociology. Representative topics: Instinct, Heredity, Habit, Culture Epochs, Individual Differences, Imitation, Suggestion, The Training of the Memory, Imagination, Emotions, Will Senses, Motor Activities and Moral Nature, Formal Discipline, Educational Values, Social Education. *Prerequisite: Psychology 1.*

22a. THE TEACHING PROCESS (2)—This course deals with the general principles underlying scientific teaching rather than with details of device and "method." A careful study of this course should do much toward eliminating the waste of time and energy often involved in the work of the school. Text-book: Strayer's *Teaching Process*.

23b. OBSERVATION AND THE CURRICULUM (2)—Observation and discussion of recitations in elementary and secondary school

work are required. In addition, considerable attention will be given to working out a suitable course of study. *Prerequisite: Education 22a.*

24. **TEACHING (4)**—Daily teaching for one hour in the Training School in practical application of the principles of instruction. Teachers' meeting one hour per week. *Prerequisite: Education 22a and 23b.*

25. **THE MODERN HIGH SCHOOL (2)**—The high school; its functions; organization, management, and equipment; the principal; the teacher; the pupil; the class exercise; social life; the high school and the community; present problems. (This course is offered especially for teachers who expect to do high school work.) Text-book: Brown's *The American High School*.

26. **THE ELEMENTARY SCHOOL (2)**—Topics similar to those treated in course 25 will be discussed in their relation to the elementary school. (This course is offered for teachers who expect to teach in the elementary schools.)

27a. **SCHOOL MANAGEMENT (3)**—This course is for those preparing to teach in graded schools. It will include such topics as The Qualifications of the Teacher, Grading and Promotion, the Recitation, Discipline, Study and Preparation, School Incentives and the School and the Community. Text: Dutton's *School Management*. *Not offered during 1914-15.*

27b. **RURAL SCHOOL MANAGEMENT (3)**—This course is designed to make both the aim and methods of conducting a rural school very definite, and is designed especially for those rural teachers who have had little opportunity to see better schools than their own. The enrichment of the life of the country child will be kept in mind, and topics such as Plays and Games, Study Program, Agriculture in the School, etc., will be considered. Text: Culter & Stone's *Rural School Management*. *Offered only on demand.*

28. **COMPARATIVE SCHOOL SYSTEMS (3)**—A study of the striking features of the school systems of France, Germany, England, and the United States, appealing especially to those interested in a better supervision of schools. These countries are seeking efficiency in widely varying ways and to some extent are seeking to develop varying traits in their citizens. Text: Hughes' *The Making of Citizens*. *Not offered during 1914-15.*

30b. **Logic**.—This course will not only give a foundation for any subsequent philosophical study, but the constant aim will be to throw the light of logic on the practical problems of everyday life. A careful study will be made of inductive and deductive reasoning, much attention being given to argument and debate. Text-book: Hibben's *Logic—Deductive and Inductive*.

31. **Ethics**.—After some little attention to the growth of ethics in history this course will largely confine itself to helping the student acquire better methods of estimating and controlling conduct. Studies will be made of the moral problems that have confronted people from primitive times to the present, and of the comparisons between individual and group morality. Text-book: Dewey and Tufts' *Ethics*.

## ENGLISH

PROFESSOR SHANNON, ASSOCIATE PROFESSOR GREEVER, ASSOCIATE PROFESSOR GOODE, MR. WILLIAMS, MR. WALKER, MR. EVANS.

The aim of the courses in the Department of English is (1) to train students to write clearly and correctly their mother-tongue and (2) to teach them to understand and appreciate the best in literature. These two purposes go hand in hand, for composition work can be made an aid to the student's appreciation of good literature just as reading good literature will certainly improve his style. Every course in composition, therefore, is accompanied by a considerable amount of required reading and every course in literature requires a certain amount of written criticism.

Students who select English as their major subject are required to take, besides English 1 and 2, twelve hours from the following courses: English 4a or 4b in the junior year; two courses from English 10, 11b, and 12; and the remaining number of hours from English 3b, 4a, 4b, 5a and 5b, 6a and 6b, 7a and 7b, 8a, 9a and 9b, 10, 11b, and 12.

1. **RHETORIC AND ENGLISH COMPOSITION (3)**.—Lectures, recitations, themes, and conferences. Practice in exposition, argumentation, description, and narration. The instruction will be based chiefly upon a study of modern masters of English prose style,



and upon the student's own themes. An outline of the course will be furnished each student at the first meeting of the class. *Required of all freshmen.*

ASSOCIATE PROFESSOR GOODE.

MR. WILLIAMS.

MR. WALKER.

MR. EVANS.

2. HISTORY AND DEVELOPMENT OF ENGLISH LITERATURE IN OUTLINE (3).—This course is intended to give the student a general view of the history and development of English literature from Anglo-Saxon times to the end of the nineteenth century. Selected masterpieces, representative of different periods, are studied in class. A considerable amount of outside reading and weekly reports are required. The class meets as a whole once a week for lectures, and in small sections twice a week for more detailed study of the reading required. Text-book: *Century Readers for a Course in English Literature*. *Required of all sophomores in the B. A. course; elective for others who have credit for English 1.*

PROFESSOR SHANNON.

ASSOCIATE PROFESSOR GOODE.

MR. WILLIAMS.

MR. WALKER.

3b. AMERICAN LITERATURE (3).—After a brief survey of colonial and revolutionary literature, a fuller study is given to Irving, Cooper, Bryant, Poe, Emerson, Lowell, Longfellow, Hawthorne, Whittier, Holmes, and Whitman, followed by a consideration of the minor poets of the South. *Open to students who have credit for English 2. Omitted in 1914-15.*

MR. WILLIAMS.

4a. ENGLISH COMPOSITION: EXPOSITION AND ARGUMENTATION (3).—The purpose of this course is to teach advanced students the principles of exposition and argumentation and to develop reasoning power as well as the ability to write clear and vigorous prose. As training in thorough investigation each student is required during the semester to do extensive reading upon some subject and present the results of his work in a thesis which may be either expository or argumentative in character. Text-books: Gardiner's *Forms of Prose Literature*, Foster's *Argumentation*

*and Debating*, and the current numbers of the *Atlantic Monthly*.  
*Open to students who have credit for English 2.*

ASSOCIATE PROFESSOR GOODE.  
 MR. EVANS.

4b. ENGLISH COMPOSITION: NARRATION AND DESCRIPTION (3)  
 —This course is intended for advanced students who are interested in composition from a literary standpoint. The art of description and the structure of the short story will be studied.  
*Open to students who have credit for English 2.*

MR. EVANS.

5a. NINETEENTH CENTURY PROSE (3)—A study of the novel is made, beginning with its development in the eighteenth century. Considerable reading in the works of the chief novelists and frequent written reports are required.

5b. NINETEENTH CENTURY PROSE (3)—This course deals with the essay. Attention is given chiefly to Lamb, Macaulay, Carlyle, Newman, and Arnold. Reading and reports. *Open to students who have credit for English 2.*

MR. WILLIAMS.

6a. SIXTEENTH CENTURY LITERATURE (3)—The work of the course deals with the non-dramatic literature of this period. A study is made of the Elizabethan lyric and the beginnings of English prose style. Lectures, assigned readings and reports.

6b. SIXTEENTH CENTURY LITERATURE (3)—The Pre-Shakespearean drama is studied. Its development is traced from the miracle and morality plays to Shakespeare. Reading and reports. Text-book: Manly's *Specimens of the Pre-Shakespearean Drama*, 2 volumes. *Open to students who have credit for English 2.*

MR. WALKER.

7a. SEVENTEENTH CENTURY LITERATURE (3)—The course includes a consideration of the works of Bacon, Browne, and Walton, and the lyrics of the reigns of James I and Charles I. Lectures, assigned readings, and reports. Text-book for the lyrics: Schelling's *The Seventeenth Century Lyrics*.

7b. SEVENTEENTH CENTURY LITERATURE (3)—An intensive study of the life and poetry of Milton. *Omitted in 1914-15.*

MR. WALKER.

8a. EIGHTEENTH CENTURY LITERATURE (3)—This course includes the prose and poetry of the period of Classicism in English

literature. It deals chiefly with the works of Defoe, Swift, Addison, Steele, Pope, Johnson, Goldsmith and Burke. Lectures, assigned readings, and reports. *Open to students who have credit for English 2. Omitted in 1914-15.*

MR. WILLIAMS.

9a. NINETEENTH CENTURY POETRY (3)—A study of the development of the romantic movement in English poetry from its beginning in the eighteenth century to the death of Keats. Especial attention is given to the poetry of Wordsworth, Coleridge, Byron, Keats, and Shelley.

9b. NINETEENTH CENTURY POETRY (3)—The Victorian poets, especially Tennyson and Browning. *Open to students who have credit for English 2.* ASSOCIATE PROFESSOR GOODE.

10. CHAUCER (3)—A study of Chaucer's language and literary style for the purpose of comprehending his genius as a poet. Text books—Liddell's *Chaucer: Prologue, Knight's Tale, and Nun's Priest's Tale*, and Skeat's *The Student's Chaucer*. Students must have the consent of the instructor before electing this course. *Open to students who have credit for English 2.*

11b. ANGLO-SAXON (3)—The purpose of this course is to give students a knowledge of the earliest form of English, and constant comparison of modern English with Anglo-Saxon is made. Text books—Bright's *Anglo-Saxon Reader*, Lounsbury's *History of the English Language*. *Open to students who have credit for English 2.* PROFESSOR SHANNON.

12. SHAKESPEARE (3)—A critical study of six of Shakespere's plays—for 1914-15, *Macbeth*, *Henry IV* (both parts), *King Lear*, *All's Well That Ends Well*, *The Winter's Tale*. *Open to students who have credit for English 2.* PROFESSOR SHANNON.

13. ENGLISH COMPOSITION (3)—This course is intended primarily for students in the colleges of engineering and agriculture who wish further training in composition beyond English 1. The purpose is to serve the practical needs of students who shall later have occasion to write clearly and concisely upon technical subjects. *Lecture for engineering and agricultural students who have credit for English 1.* MR. WALKER.

14. ENGLISH LITERATURE (3)—A course for graduates and seniors who are taking English as their major subject. A study

either of criticism or poetics is made, the subject being selected after the organization of the class. In 1913-14 the course was a study of the principles of criticism with the outline course in English 2 as a basis.

PROFESSOR SHANNON.

15. THE ENGLISH BIBLE (2)—OLD TESTAMENT—This course treats briefly of the ancestry of our English Bible; the formation of the Canon; the origin, form and contents of the several books; the political history of Israel; and the geography of Palestine. Two hours throughout the year.

MR. DICKSON.

16a or b. NEW TESTAMENT (1)—This course will be conducted on the same general plan as the course in Old Testament. Special attention will be given to the History of New Testament times in Palestine, and a comprehensive view of each book will be given in the light of its authorship, purpose, and history. Two hours, one term.

MR. DICKSON.

## GEOLOGY AND MINING

PROFESSOR DRAKE.

In the instruction in geology much emphasis is placed upon field work. Within easy reach from the University are found formations from the Cambro-Ordovician to the Pennsylvanian inclusive. The Ozark plateau region about Fayetteville offers abundant opportunity for physiographic studies, while for training in statigraphic mapping it is unexcelled.

Students who major in the department of geology are required to take courses 1a, 1b, 2, 3, 5a, 5b, 6a, 7, and 4a or Mining 16.

All major students in geology are required in their senior year to prepare a report including maps, sections, and other necessary illustrations of some area where they have worked out the geology.

To students in agriculture, courses 1a, 1b, and 6a are recommended.

To students desiring a general knowledge of the subject, courses 1a, 1b, and 2 are recommended.

Students who are preparing themselves to teach geography and physiography are expected to complete courses 1a, 1b, and 3.

1a. GEOGRAPHY (3) An elementary course suited to freshmen and adapted to the need of teachers of geography and phys-

iography in the secondary schools. Text-book. Salisbury, Barrow and Tower's *Elements of Geography*. Tu. W. Th. 3 and 6 and M. Tu. Th. 7.

1b. DYNAMIC AND STRUCTURAL GEOLOGY (3)—The materials of the earth; the geologic work of the atmosphere and water; glaciers and glaciation; diastrophism; vulcanism. Text-book. Chamberlain and Salisbury's *College Geology*. *Prerequisite*: Geology 1a. Tu. W. Th. 3 and 6 and M. Tu. Th. 7.

2. HISTORICAL GEOLOGY (3)—The origin of the earth; earth history; the evolution of life. Text-book same as in Geology 1b. *Prerequisite*: Geology 1b. M. Tu. W. 2.

3. PRACTICAL GEOLOGY (Either one or both terms) (3)—Field and laboratory work nine periods a week with the construction of geologic maps and sections. *Prerequisite*: Geology 1b.

4a. STRATIGRAPHIC PALEONTOLOGY (3)—Field and laboratory work involving the collection of a local fauna, its identification, description, and correlation. *Prerequisite*: Geology 2.

5a. CRYSTALLOGRAPHY AND MINERALOGY (3)—Lectures and recitations three hours a week on the elements of geometric crystallography, followed by laboratory work on the determination of minerals. *Prerequisites*: Solid geometry, and chemistry 1. Th. F. 5, 6, 7, 8.

5b. DETERMINATIVE MINERALOGY AND BLOW-PIPE ANALYSIS (2, 3, or 4) —(This course is also offered the first term in order to accommodate Civil Engineering students). Determination of minerals by the blow-pipe, and in the wet way. Text-book: Rogers' *Study of Minerals*. *Prerequisite*: Chemistry 1. Th. F. 5, 6, 7, 8.

6a. ECONOMIC GEOLOGY (3)—The formation, modes of occurrence, uses, and geographic distribution of economic geologic

products and mine valuation. *Prerequisites:* Chemistry 1, Geology 1b, and Geology 5b.

PROFESSOR DRAKE.

7. **PETROLOGY (3)**—Microscopical and macroscopical determination of minerals and rocks; classification of igneous rocks. *Prerequisite:* Geology 5a and 5b. One recitation and two laboratory periods.

PROFESSOR DRAKE.

## GERMAN

PROFESSOR BRISCOE, ASSOCIATE PROFESSOR LENTZ.

The courses in German aim to acquaint the student with the German language and literature as a means of culture or with the language for use in other fields of knowledge. Students who major in the department will be required to do not less than eighteen hours in German.

1. **ELEMENTARY GERMAN (3)**—Grammar and composition with the reading of easy narrative prose.

2. **MODERN GERMAN PROSE (3)**—Reading of prose from nineteenth century authors, such as Storm, Heyse, Hauff, Baumbach, Freytag. Drill in grammar with the text as basis; study of German idioms; practice in German conversation.

2c. **GERMAN COMPOSITION (2)**—This course supplements German 2 and should be taken in connection with it, and consists of oral and written reproduction of assimilated texts.

3. **GOETHE AND SCHILLER (3)**—The reading of selected works of these authors and a study of their lives. Collateral reading and reports. *Prerequisite:* German 1, 2 and 2c.

4. **GERMAN COMPOSITION AND CONVERSATION (3)**—Practice in conversation and composition, suited especially to students who intend to teach German. *Prerequisite:* German 1, 2 and 2c.

5a. **HISTORY OF GERMAN LITERATURE (3)**—The history of



German literature to 1740, with readings of modern German translations from *Ulfilas*, the *Lay of Hildebrand*, the *Eddas*, *Beowulf*, the *Nibelungenlied*.

6b. HISTORY OF GERMAN LITERATURE (3)—The history of German literature from 1740 to the present. A study of modern literary movements. Reading of selections from the principal writers. Lectures, collateral reading and reports. *Prerequisite:* German 1, 2, 2c and 3.

7. GERMAN LYRIC AND BALLAD POETRY (2)—Lyrics and ballads of the eighteenth and nineteenth centuries. Collateral readings and reports. *Prerequisites:* German 1, 2, 2c and 3.

8. THE GERMAN NOVEL (2)—Study of the novel from its origin to the present. Extensive reading with reports. Students who elect this course must be able to read German with ease. *Prerequisite:* German 1, 2, 2c and 3.

9. THE GERMAN DRAMA OF THE 19TH CENTURY (2)—Readings and interpretations of Dramas of Kleist, Grillparzer, Heibel, Ludwig, Wildenbruch, Sudermann, Hauptmann and Fulda. *Prerequisites:* German 1, 2, 2c and 3.

10. ADVANCED COMPOSITION (2)—Original compositions, letter writing and commercial correspondence. Permission from the instructor is necessary for admission to this course.

11a. MIDDLE HIGH GERMAN (2)—Grammar and selected readings. Permission from the instructor is necessary for admission to this course.

11b. GOTHIC (2)—Selections from the Bible translation of Ulfilas. Permission from instructor is necessary for admission to this course.

12. ADVANCED GERMAN GRAMMAR (3)—Lectures with special reference to the needs of those intending to teach. Permission from the instructor is necessary for admission to this course. *Not given in 1914-15.*

13. GERMAN CONVERSATION (4)—Two hours credit will be allowed on this course. Very little outside preparation required. Permission from the instructor is necessary for admission to this course.

14. CURRENT PUBLICATIONS (2)—Reading and discussion of articles found in the leading German periodicals. Permission from the instructor is necessary for admission to this course.

## HISTORY AND POLITICAL SCIENCE

PROFESSOR THOMAS, ASSISTANT PROFESSOR MURPHY.

The courses in this department are designed to afford general culture, and in addition are essential to those who are looking to law, journalism, politics, the ministry, or any other public calling. History 1a and 1b are foundation work and should be taken in the freshman year. Other courses except course 2 are not open to freshmen. At least fourteen hours will be required of majors in history.

1. MEDIEVAL HISTORY (3)—This course is designed to give the student a knowledge of the essential contributions of the ancient world to history, of the reorganization of German society upon the basis of Greco-Roman Civilization, and the beginnings of the modern states, the Renaissance, Reformation, the great religious wars, absolutism, the contest for supremacy on the high seas, the French Revolution, and the democratic movements of the nineteenth century. English history will also be emphasized, about one period a week being devoted to it. All students seeking a liberal education, or expecting to teach history, should take this course. Text-books: Robinson's *History of Western Europe*; Cheyney's *Short History of England*; Richardson's *Syllabus*. T. Th. 2; M. F. 2; M. F. 4; M. F. 6. All sections meet Wednesday, the fifth period.

PROFESSOR THOMAS.

ASSISTANT PROFESSOR MURPHY.

2. HISTORY OF THE UNITED STATES TO 1914. (3)—This course is intended for those who expect to teach American history in the high schools. All students must supply themselves with McKinley's *Illustrated Topics for American History*, Garner's *American Government*, and some standard history of the United States. They are also expected to keep in touch with present day history through current periodicals. Those who take History 2 will not receive credit in History 3. M. W. F. 3.

ASSISTANT PROFESSOR MURPHY.

3a. THE UNITED STATES, 1776-1837 (3)—After a brief survey of the antecedents of the Revolution a careful study will be made of the Confederation, the formation of the Constitution, the careers of the Federalist and Republican parties, expansion,

the settlement of the west, tariff and financial legislation, special attention being given to the growth of nationality and of democracy. Intended for students wishing a more intensive course in modern history, or who expect to choose history for their major.

3b. THE UNITED STATES SINCE 1837 (3)—Special attention will be given to the gradual sectionalization of the country over slavery and states' rights, the results of the Civil War and Reconstruction, the industrial and social developments of recent times, and the growth of democracy. Much library work will be required. M. W. F. 4. PROFESSOR THOMAS.

4a. AMERICAN STATE GOVERNMENT (2)—A study of the place of the state in our federal system, of the constitutional law of the states; of the structure and workings of American state governments as they exist today, and of some of the practical problems now before the states, such as administrative, legislative, and judicial reform. Special attention will be given to the work of the Arkansas legislature.

4b. POLITICAL PARTIES (2)—Organization and workings of political parties. The caucus, the convention, the boss, the primary; methods of state control. Largely a library and lecture course. W. F. 2. PROFESSOR THOMAS.

5. ENGLAND FROM THE EARLIEST TIMES TO 1485 (3)—A general cultural course treating the political, the literary, the religious and economic activities of the people. The origin and growth of the more important institutions such as the kingship, parliament, courts, the church and the struggle for constitutional government will be studied.

5b. ENGLAND FROM 1485 TO THE PRESENT TIME (3)—A continuation of History 5a. Special attention will be given to the Renaissance, the Reformation, the struggle for constitutional and democratic government, the industrial revolution, and the founding of the British Empire. M. W. F. 1. Offered in 1914-15. ASSISTANT PROFESSOR MURPHY.

6a. NATIONAL GOVERNMENT (3)—A study and comparison of the structure and powers of the national governments of England, United States, France, Germany and Switzerland. Special emphasis will be given to the place of the federal system in public law. This course will be based on the works of Ozz, Beard, Garner, Burgess and the constitutions of the different countries.

6b. INTERNATIONAL LAW (3)—A brief sketch of the history of international law, and a study of the principles now considered binding on civilized nations. For juniors or seniors who have had at least three hours of history. Considerable library work will be required. M. W. F. 3. PROFESSOR THOMAS.

7a. FRENCH REVOLUTION AND THE NAPOLEONIC ERA (2)—France on the eve of the Revolution; French political philosophers; causes and events of the Revolution, and the wars of Napoleon.

7b. DEMOCRATIC MOVEMENT IN THE NINETEENTH CENTURY (2)—A brief survey of Europe in 1815 will be made after which will be considered the development of constitutional government; the unification of Italy and Germany; and the present condition of world politics. T. Th. 4.

ASSISTANT PROFESSOR MURPHY.

8a. ENGLAND UNDER THE TUDORS AND THE STUARTS (3)—A study of the political, religious, literary, and economic history of England during the two periods. *Not given in 1914-15.*

8b. THE BRITISH EMPIRE (3)—While a brief survey of the general history of England through the eighteenth and nineteenth centuries will be made, attention will be devoted mainly to a study of England's colonial history and of the forces that have developed the British Empire of today. An analysis of the present imperial policy will be given. A library and lecture course. *Prerequisite:* History 1a and 1b or Junior standing. M. W. F. 1. *Not offered in 1914-15.*

ASSISTANT PROFESSOR MURPHY.

9a. HISTORY OF GREECE (2)—This course is designed to give a more extensive knowledge of the history and institutions of the Greeks. A general knowledge of the subject is presumed.

9b. HISTORY OF ROME (2)—The explanations made above in regard to the history of Greece apply to this course.

PROFESSOR THOMAS.

10. CURRENT HISTORY (1)—A library course in contemporary history. The student will use some of the best daily papers, the standard weekly and monthly magazines, including some foreign periodicals, and annual publications, such as the *Statesman's Year Book*, the *American Year Book*, *Annual Register*, *Inter-*

*national Year Book, World's Almanac*, maps, encyclopedias, and general histories. Each student will take up some problem of today and trace its historical setting. There will be frequent conferences with instructors and weekly reports on topics.

PROFESSOR THOMAS

ASSISTANT PROFESSOR MURPHY.

11a. MUNICIPAL GOVERNMENT (2)—This course is intended to give an intelligent understanding of the actual workings of American cities. Consequences of the rapid growth of cities, structure of the government, council, mayor, police, health, education, and the newer tendencies in city government are questions that will receive attention.

12b. HISTORY OF LATIN AMERICA (2)—This course deals with Spanish and Portuguese colonization and government, the revolt of the colonies, their political and economic development and their relation to the United States.

ASSISTANT PROFESSOR MURPHY.

13. THE UNITED STATES 1763-1789 (2)—The colonies in their relations to the mother country with special reference to the attempt at imperial taxation. Particular attention will be given to the literature of the period as preparing the colonists for separation. The steps leading to the Declaration of Independence will be traced in detail; also the failure of the Confederation and the formation and adoption of the Constitution.

13b. THE CIVIL WAR AND RECONSTRUCTION (2)—The first part of this course will deal mainly with the events leading up to the war; the second, with political, economic and social phases of Reconstruction. *Prerequisite:* Six hours of history. T. Th. 3. Not offered in 1914-15. PROFESSOR THOMAS.

14. RECONSTRUCTION IN ARKANSAS (Seminar) (1)—A study from original sources of the history of Reconstruction in typical counties of Arkansas. Students will gather in the summer the data from county records, newspaper files, interviews, etc., and after numerous conferences with the instructor the following year they will prepare papers or monographs. *Not given in 1914-15.* PROFESSOR THOMAS.

## MATHEMATICS AND ASTRONOMY

PROFESSOR DROKE, ASSOCIATE PROFESSOR DUNN, ASSOCIATE  
PROFESSOR HARDING, MR. TURNER.

Students who major in mathematics must take Mathematics 3, 5, 6, 8, and 9, or their equivalent. Mathematics 20, 21, 22, 23, 24, 25, 26, 27, may be elected by graduate or undergraduate students.

0. ALGEBRA (3)—Required of Engineering students who present less than one and one-half entrance units in Algebra. Text-book: Reitz and Crathorne's *College Algebra*. M. W. F. 3, 4.

1a. ALGEBRA (3)—Text-book: Same as in Math. 0. M. W. F. 3, 4.

1b. SOLID GEOMETRY (3)—Sections and periods the same as in 1a. Text book: Wentworth's and Smith's *Solid Geometry*.

2a. PLANE TRIGONOMETRY (3)—Text-book: Rothrock's *Trigonometry*. T. W. Th. 1, 3, 4.

2b. ANALYTIC GEOMETRY (3)—Sections and periods the same as in 2a. Text-book: Fine and Thompson's *Coordinate Geometry*. Mathematics 1a and 1b, 2a and 2b are required of freshmen in the courses in Engineering in the order given, but any one of these courses may be elected in either the first or second semester by freshmen of other departments.

3. ALGEBRA, SOLID GEOMETRY, PLANE TRIGONOMETRY (4)—About twelve weeks are given to each subject, Algebra coming first. This course is required of freshmen in the College of Arts and Sciences (not compulsory for women).

Freshmen who present only one entrance unit in Algebra should take this course; those who present one and one-half units may take 1a, 1b, or 2a.

4a. ALGEBRA (continuation of 1a) (3)—Required of sophomore engineering students.

4b. ANALYTIC GEOMETRY (continuation of 2b) (3)—Required of sophomores in the courses in Engineering.

5. ANALYTIC GEOMETRY (3)—Elective for B. A. students.

6. ALGEBRA (continuation of the Algebra of Mathematics 3) (2)—Elective for sophomores in the College of Arts and Sciences.

7. DIFFERENTIAL AND INTEGRAL CALCULUS (3)—Required of



sophomore Engineering students. Text-book: Townsend and Goodenough's *Essentials of Calculus*.

8. DIFFERENTIAL AND INTEGRAL CALCULUS (4)—Elective for A. B. juniors and seniors, required of those who major in Mathematics. Text-book: *Granville's Calculus*.

9. THEORY OF EQUATIONS (3)—Required of those majoring in Mathematics. Text-book: Burnside and Panton's *Theory of Equations*.

10a. ALGEBRA AND PLANE TRIGONOMETRY (4)—In Algebra this course includes factoring, fractional equations, theory of exponents, radicals and quadratic equations; in trigonometry, trigonometric functions, solution of right triangles, relations among the trigonometric functions, functions of multiple and sub-multiple angles, and solution of triangles. Required of all sophomores in the College of Agriculture.

10b. TEACHING OF ELEMENTARY AND HIGH SCHOOL MATHEMATICS (3)—Second semester.

11. SPHERICAL GEOMETRY AND ANALYTICAL TRIGONOMETRY (2)—*Prerequisite: Mathematics 3.*

12a. ELEMENTARY MECHANICS (4)—This course deals with the application of Mathematics to Mechanics. A study of the laws of statics and dynamics, forces, motion of particles, friction, work, energy, etc. *Prerequisite: Mathematics 4a, 4b, 7.* Elective for juniors in all the colleges.

13. MODERN PURE GEOMETRY (3)—First or second semester. Books of reference: Godfrey and Siddon's *Modern Geometry*, and Askwith's *Pure Geometry*. This course will include the discussion of the theorems of Ceva and Menelaus, Harmonic Section, Pole and Polar, Orthogonal Circles, the Circle of Apollonius, Ptolemy's Theorem, Coaxial Circles, Inversion, Projection, and Cross Ratio. These subjects will be treated in an elementary way.

All those who are preparing to become teachers of Mathematics in high schools will find this course very helpful. *Prerequisites: Mathematics 1a and 1b, 2a and 2b.*

20. DIFFERENTIAL EQUATIONS (3)—Murray's *Differential Equations*.

21. ANALYTIC GEOMETRY OF THREE DIMENSIONS (3)—Books of reference: C. Smith's and Frost's *Solid Geometry*; Salmon's *Geometry of Three Dimensions*.

22. THEORETICAL MECHANICS (3)—*Prerequisite*: Mathematics 8 and 12.

23. ADVANCED CALCULUS (3)—*Prerequisite*: Mathematics 8.

24. ADVANCED ALGEBRA (2)—*Prerequisite*: Mathematics 6.

25. ELEMENTARY ANALYSIS (3)—A study of some of the fundamental notions of Analysis. Text-book: Hardy's *A Course in Pure Mathematics*.

26. PROJECTIVE GEOMETRY (3)—Projective forms, the principle of duality, projectivities, harmonic sections, conic sections, algebra of points, etc. Text-book: Veblen and Young's *Projective Geometry*.

## ASTRONOMY

16. ELEMENTARY DESCRIPTIVE ASTRONOMY (3)—Lectures and recitations with occasional meetings at night for observation. This course does not presuppose a knowledge of College Mathematics and is open to freshmen in all the colleges.

17. MATHEMATICAL ASTRONOMY (3)—Astronomical coordinates, parallax, time, determination of latitude, etc. Open to students who have completed Mathematics 16 and 3.

27. CELESTIAL MECHANICS (3)—Central forces, potential and attraction of bodies, the problem of two bodies, etc. *Prerequisite*: Mathematics 16 and 20.

## MILITARY SCIENCE AND TACTICS

NOBLE JAMES WILEY, *First Lieutenant U. S. A., Professor of Military Science and Tactics*.

The act of Congress donating public lands for educational purposes requires that institutions which are the beneficiaries of such donations include military science and tactics in their course of instruction.

The purpose of the military department is three-fold:

1st. By a system of military exercises to reach the entire male student body of the University (a great number of whom

do not take part in college athletics) and to build up the physique of the student, giving him a correct carriage and manly bearing.

2nd. By a modified form of military discipline to promote habits of neatness, order, punctuality, respect for authority, for the sovereign laws of the state, and the rights of others.

3rd. By training the student in the use of arms and the duties of the soldier to imbue him with ideas of patriotism and loyalty to his state and to the Union.

In accordance with the acts of Congress, the regulations of the University require all male students, not physically disabled (except members of the senior class, with whom military instruction is optional), to take the practical course in military science and tactics.

#### INSTRUCTION IN MILITARY SCIENCE AND TACTICS.

The system of instruction closely follows that used in the United States Army, and is arranged in two courses as follows:

1. **THEORETICAL**.—Lectures and instruction in Infantry Drill Regulations; Field Service Regulations; Manual of Guard Duty; Firing Regulations for Small Arms.

2. **PRACTICAL**.—The instruction covers the mechanisms of infantry drill, Butt's rifle drill, bayonet exercise, calisthenic exercises, signaling, practical demonstrations in first aid to the injured and field exercises.

The cadets are organized into one battalion, composed of a field staff, a band and four companies and a signal corps detachment. The officers and non-commissioned officers of the cadet battalion are selected from those cadets who are most proficient in their drill, most military in their bearing and most exemplary in their conduct and general deportment. The captains and lieutenants are taken from among those members of the senior class who elect drill, and from the junior class, and the sergeants and corporals from the junior and sophomore classes, respectively.

The band constitutes one of the most interesting and instructive features of the military organization and takes part in all military ceremonies.

Competitive drills are held at the close of each college year and prizes are awarded for proficiency.

The three students of the senior class who have shown the greatest interest and efficiency in the department, are reported by name to the Secretary of War. The President of the United States, in appointing officers to the regular army from civil life, gives preference to those whose names are so recorded. Upon graduation, officers of the cadet battalion are brevetted in the State Guard with the rank of Second Lieutenant.

#### INSPECTION.

Under the authority of the President of the United States the military department of the University is inspected every year by an army officer specially detailed for this purpose.

#### EQUIPMENT.

Each male student, matriculating at the University for the first time, is required to supply himself with a new uniform, complete, consisting of the following articles:

One blouse, cadet gray; one pair of trousers, cadet gray; one cap, cadet gray; two pairs of trousers, white duck; two pairs of gloves, white cotton; two collars, linen.

The contract for supplying the above named articles is let each year by the Board of Trustees to the lowest and best bidder and the goods are delivered to the cadets by the agent of the successful bidder, subject to approval of the Commandant as to fit, quality and workmanship.

### PHYSICS

#### PROFESSOR RIPLEY, ASSOCIATE PROFESSOR KEMP.

The courses in physics are suited to the needs of students in agriculture, arts and engineering, of students who propose to teach the science, and of students who intend to do graduate work in physics.

1. GENERAL PHYSICS (3).—Recitations two hours a week, with two hours of laboratory work. *Required of students in the courses in engineering and in the B. S. C. course.* T. Th. 1; Tu. Th. 3, M. Tu. W. Th. 5, 6.

PROFESSOR RIPLEY.

ASSOCIATE PROFESSOR KEMP.

2. GENERAL PHYSICS (3).—A continuation of Physics 1. Lec-

tures and recitations three hours a week. Special attention is given to mechanics, heat and electricity. *Required in the Electrical Engineering and B. S. C. courses;* elective for other students who have had Physics 1 or its equivalent. M. W. F. 1.

3. PHYSICAL LABORATORY (1)—Laboratory work, two hours a week, to accompany Physics 2. Determinations of moment of inertia, tension, center of mass, coefficient of friction. Young's modulus, thermal expansion, heats of fusion and vaporization, capacity, high and low potentials, photometry, etc. F. 6, 7.

ASSOCIATE PROFESSOR KEMP.

4. MECHANICS (4)—A development of the theory of mechanics from the physical standpoint, with practical applications. Either one or two semesters' work may be elected. *Prerequisite:* Physics 2. M. Tu. W. F. 1.

PROFESSOR RIPLEY.

5. EXPERIMENTAL PHYSICS (4)—Lectures and recitations, with demonstrations and experiments three hours a week. Laboratory work two hours a week. Practical problems and the application of physical laws and principles to every day life. *Open to all students.* M. W. F. 2, and M. W. F. 3 M. T. W. Th. 5, 6.

PROFESSOR RIPLEY.

ASSOCIATE PROFESSOR KEMP.

5b. GENERAL PHYSICS (3)—Recitations four hours a week, laboratory work two hours a week. Required of sophomores in the B. S. A. course. M. T. W. F. 4.

ASSOCIATE PROFESSOR KEMP.

6. HOUSEHOLD PHYSICS (1)—Recitations four hours a week, laboratory work two hours a week throughout the year. This course is required of all students in Domestic Science and as the heading indicates is physics applied to daily life. It is a course especially prepared in experimental and applied physics for female students. M. T. W. Th. 4.

PROFESSOR RIPLEY.

7a or 7b. HEAT (3)—Five hours a week, for the most part laboratory work. *Prerequisite:* Physics 2.

PROFESSOR RIPLEY.

8b. ELECTRICAL MEASUREMENTS (2)—Two hours a week of recitations and discussions in the theory of electrical measuring instruments and electrical measurements. Four hours a week of

laboratory exercises in calibrating instruments and tests of conductors, electrolytes and dielectrics.

ASSOCIATE PROFESSOR KEMP.

9a or 9b. LIGHT (2)—Two hours class work a week, treating of the modern theory of light and modern advances in this field of physics. Four hours per week of laboratory work in spectroscopy, the use of the photometer, optical bench, interferometer, optical pyrometer, etc.

PROFESSOR RIPLEY.

10. MATHEMATICAL PHYSICS (3)—Electrodynamics or Thermodynamics. *Prerequisite:* Physics 1, 2, 7b; Mathematics 5 or 6.

ASSOCIATE PROFESSOR KEMP.

11. MOLECULAR PHYSICS (2)—For students in chemistry. Osmosis, vapor density, diffusion, electro-chemistry. *Prerequisite:* Physics 1.

PROFESSOR RIPLEY.

12b. ACOUSTICS (2½)—Two recitations and four hours of laboratory work a week. *Prerequisite:* Physics 1.

ASSOCIATE PROFESSOR KEMP.

13. THE TEACHING OF PHYSICS.—A course for prospective teachers in secondary schools. Discussions of methods of teaching physics, text-books, laboratory manuals, with reports on assigned topics. *Prerequisite:* Physics 1, 2, 3.

PROFESSOR RIPLEY.

14. RECENT ADVANCES IN PHYSICAL SCIENCE.—Lectures and recitations on the electron theory, conduction of electricity through gases, radio-activity, etc.

PROFESSOR RIPLEY.

## PHYSICAL EDUCATION

(For Women)

MISS MILLER.

The purpose of the work in this department is to improve the standard of the general health and to increase the physical efficiency of the young women of the University. A physical examination is made of each student upon entrance and at such intervals as may seem necessary.

The work is conducted in the indoor gymnasium and during suitable weather on outdoor courts. The uniform consists of a white middie-blouse, black serge bloomers, and gymnasium shoes.



Physical education is required of all regular women students during their first two years of residence at the University. One unit of credit is given for two hours of work throughout the school year. A maximum of four units of credit in Physical Education may be used toward a degree.

Two hours per week are required for one hour's credit.

1. **ELEMENTARY COURSE (1)**—General gymnastic work; gymnasium games. Lectures on personal hygiene. (Required.)

2. **INTERMEDIATE COURSE (1)**—(a) General gymnastics; continuation of course 1. One hour. (b) Basket-ball, indoor base-ball, tennis. One hour. (c) Aesthetic and folk dancing. (Required) 2a and 2b or 2a and 2c are equivalent to one unit of credit. *Prerequisite:* Physical Education 1.

3. **ADVANCED GYMNASTICS (1)**—A continuation of 2a. Fencing, field sports, and out-of-door games. *Prerequisite:* Physical Education 2.

4. **ADVANCED DANCING (1)**—*Prerequisite:* Physical Education 2.

5. **TEACHER'S COURSE (1)**—Theory and practical work, for public school teachers. *Prerequisite:* Physical Education 2. College credit allowed seniors.

## ROMANCE LANGUAGES

PROFESSOR MARINONI, MISS HARGIS.

The courses offered by the department of Romance languages are intended to give students an intimate acquaintance with the languages spoken in the principal Latin countries and to stimulate knowledge and appreciation of the literary attainments of the Latin peoples. In the higher courses emphasis is laid especially on the study of literature, but in order to give students an opportunity to become familiar with the spoken idioms, several of the advanced courses are conducted in the language which forms the object of study.

Major students in the department of Romance languages upon completing the required work, are expected to have a fair speaking knowledge of at least one language. They are therefore urged to take in their second or third year of work the conversation courses offered by the department.

If French is selected as the major study, the student will be required to take all the courses offered by the Department.

A student intending to do major work in Romance languages is expected to take French 1, 2, 3, 4, 5, Italian 1 and 2 and Spanish 1, or Spanish 1 and 2 and Italian 1.

#### FRENCH.

1. ELEMENTARY FRENCH (3)—Grammar, reading, recitation, composition. Pronunciation is carefully taught and oral drill insisted upon. Fraser and Squair's *French Grammar*, Aldrich and Foster's *French Reader*. M. W. F. 1; M. W. F. 2; W. Th. F. 4; M. W. F. 6.

2. FRENCH PROSE AND POETRY (3)—Composition, sight reading, syntax, conversation. Cameron's *French Composition* and reading of representative works of modern French authors. M. W. F. 3; M. W. F. 7.

3. FRENCH CONVERSATION.—There are two meetings of the class during the week, for which one hour credit is given. Open to students who have completed French 1. M. F. 2.

4. FRENCH LITERATURE OF THE SEVENTEENTH CENTURY (3)—The aim of this course is to obtain a general view of the classic period of French literature. The most important literary productions of the century will be read and analyzed. Considerable outside reading will also be assigned. Lanson's *Histoire de la littérature française* and texts from Delagrave's *Classiques français*. This course is conducted in French. M. W. F. 3.

5. HISTORY OF FRENCH LITERATURE IN THE NINETEENTH CENTURY (3)—Lectures, with reading of the leading authors of the Romantic period. Lanson's *Histoire de la littérature française*. This course will be conducted in French. M. W. F. 6.

6. MODERN FRENCH POETRY (1)—A study of the evolution of French poetry from 1850 to our days. New tendencies in poetry and the reaction against Romanticism as shown in the works of Leconte de Lisle and other Parnassians. Walch's *Anthologie des Poètes français contemporains*.

7. FRENCH DRAMA (1)—The evolution of French Drama from the origins to the present day. Lectures, outside reading, reports. The course is conducted in French.

8. HISTORICAL FRENCH GRAMMAR (1)—The text used will be

either Brunot's *Historical French Grammar* or Darmesteter's *Cours de grammaire historique*.

## ITALIAN

1. ELEMENTARY COURSE (3)—Grammar, composition, dictation, conversation. Marinoni's *Grammar and Reader*. Wilkins and Altrocchi's *Italian Short Stories*. Tu. W. Th. 2.

2. ADVANCED COURSE (3)—Syntax, composition, conversation, reading of representative modern works. Marinoni's *Selections from G. Carducci*, selections from the works of Foscolo, Leopardi, Manzoni. The second term will be devoted to the study of Dante's *Inferno* (Grandgent's edition). M. W. F. 4.

## SPANISH

1. ELEMENTARY COURSE (3)—Grammar, composition, dictation, conversation. Reading of easy texts. Lousseaux's *Grammar*; *Tabladillo Cuéntale* de los, Padre Isla's *Gil Blas*. M. W. F. 5.

2. MODERN SPANISH (3)—Syntax, composition, conversation, reading of representative modern works. The course is conducted largely in Spanish. M. W. F. 7.

3. GENERAL VIEW OF SPANISH LITERATURE (2)—Lectures, reports, and reading of standard works. The course is conducted in Spanish. Tu. Th. 3.

## DEPARTMENT OF FINE ARTS

HENRY DOUGHTY TENNY, *Lecturer and Instructor in Piano, Organ, Theory and History of Music*

ELIZABETH GALBRAITH, *Instructor in Art*

WILLIE VANDEVENTER CROCKETT, *Instructor in Vocal Expression and Literary Interpretation.*

MARY CUMMINGS BATEMAN, *Instructor in Vocal Music*

EVELYN METZGER, *Instructor in Art*

MABEL BELL, *Instructor in Piano*

RAMON ADAMS, *Instructor in Violin*

EUNICE OATES, *History of Music*

OWEN MITCHELL, *Instructor in Piano.*

In the Department of Fine Arts are grouped courses in instrumental music (piano, organ and violin), vocal music, art, and expression. Special courses in music, leading to a certificate, are offered. For a statement of the requirements of these

courses, see p. 53. For a statement of the admission requirements see pp. 20-21. For fees, see p. 34.

A maximum of nine hours' credit on the B. A. degree is allowed from the Department of Fine Arts, six hours of which may be selected from any one department.

#### MUSIC

The courses in music are planned on broad lines, with the view of fitting pupils for careers as teachers and artistic concert performers.

Courses 2, 3, and 4 will be accepted for credit toward the B. A. degree and the student may present three additional hours from group 1.

*Group 1: Piano, Pipe Organ, Voice, Violin*

#### PIANO

MR. TOVEY, MISS BELL, MR. MITCHELL.

The aims of the courses in piano music are to develop technical control and power of musical conception as adapted to artistic ends.

In general outline the course is as follows:

1. PREPARATORY GRADE—National Graded Course Books I and II; simple exercises for wrist development, major scales, broken chords, and arpeggios. Sonatinas by Diabelli, Clementi, Kuhlau, Lichner; studies from Koehler, Biehl, Loeschorn, Czerny, Gurlitt; salon pieces; preparatory octave work.

2. INTERMEDIATE GRADE (2)—Selected technics from Tausig, Krauss, Heller, Loeschorn, *Op. 66*; Czerny, *Op. 260*; sonatas by Mozart, Haydn, Beethoven; Mendelssohn's *Songs without Words*; Smith's and Low's *Octave Studies*; duets for piano and piano and violin; Bach's *Little Preludes and Fugues*.

3. ADVANCED GRADE (2)—Extended scales in various accents; diminished and dominant seventh arpeggios; etudes from Czerny, *Op. 710*; Heller, *Op. 45*; Cramer; Clementi's *Gradus ad Parnassum*; Kullak's *Octave Studies*; Bach's *Suites, Preludes Fugues*; Chopin, *Op. 10 and Op. 25*, Valses, Preludes, Nocturnes; Beethoven Sonatas; compositions by Mendelssohn, Schumann, Schubert, Liszt, Grieg, MacDowell, and other modern composers.

4. ACCOMPANIMENT AND ADVANCED PIANO STUDY—(2).
5. TEACHER'S COURSE (2)—Pupils preparing to teach will be given special work.

MR. TOVEY.

#### PIPE ORGAN

The aim of the instruction in pipe organ is to fit pupils to hold church positions. A knowledge of organ playing will also be helpful to those who intend to be professional musicians.

PIPE ORGAN (2)—The preliminary organ work is based on Ritter's *Organ School* and Thayer's *Pedal Studies*. Then follow Buck's *Studies in Pedal Phrasing*, Bach's *Little Preludes and Fugues*, and selections from composers for the organ, such as Guilman, Lemare, Tours, Hollins, Rheinberger, and others.

MR. TOVEY.

#### VOICE

The purpose of instruction in this branch of music is the correct production of tone and the building and development of the voice according to the old Italian method. Special stress is laid on breath control, accuracy of tone, distinct articulation, the study of intervals, scale building, sight reading, and phrasing.

In general outline the courses are as follows:

1. PREPARATORY GRADE—Marchesi's *Individual Exercises*; Panofka's *Vocalises*, Op. 85. Studies in sight reading and easy songs.

2. INTERMEDIATE GRADE (2)—Concone, Op. 12, Marchesi's *Individual Exercises*; Panofka's *Vocalises*, Op. 81; Sieber's *Vocalises*, Op. 94; Concone's *Lessons*, Op. 17, and songs of moderate difficulty, including oratorio selections.

13. ADVANCED GRADES (2)—Lamperti's *Studies in Bravura*. Oratorio and opera arias and more difficult songs by English, French, Italian, and German composers.

MRS. BATEMAN.

#### VIOLIN

The instruction in violin music is designed to form correct technique. In outline the courses are:

1. FIRST AND SECOND GRADES—Studies by Dancla and Dont.
2. THIRD AND FOURTH GRADES (2)—Studies by Kayser, Kreutzer, and Schradick.

3. FIFTH AND SIXTH GRADES (2)—Studies by Kreutzer, Fiorillo and Rode.

In addition to the studies, the pupil is given compositions of the standard composers for the violin. MR. ADAMS.

### *Course 2: Harmony*

HARMONY (first year) (1)—Keys, scales, and signatures; simple part writing; chords of the seventh and their inversions; altered and augmented chords; modulation. MR. TOVEY.

HARMONY (second year) (1)—Modulation continued; suspensions; passing chords; unharmonic notes; organ point; harmonization of melodies; playing of figured bases; double chants, chorals. The text-books in the courses in Harmony are Emery's *Harmony* and Krebs' *Manual of Modulation*. MR. TOVEY.

3. HISTORY OF MUSIC (1)—Music among ancient peoples; early church music; the development of polyphonic music and dramatic music; the development of instrumental music and the evolution of musical instruments. The development of the opera and oratorio. Modern music and musicians. Text-book: Hamilton's *Outlines of the History of Music*. MISS OATES.

4. OPERA STUDY (1)—The librettos and stories of various standard operas are studied. Concerts are given weekly consisting of selections from the operas as embodied in the Victor talking machine's records of great singers, together with piano accompaniments. Upton's *Opera Stories* and the *Victor Book of Opera* are used as text-books.

### THEORY AND PRACTICE OF ART

The plan of incorporating a practical school of drawing and painting in a college course has been demonstrated as not only possible but very successful. The studio work is conducted in the same manner as the purely technical art schools, while the students have the advantage of doing college work which renders them more sensitive to artistic impressions.

There is no tuition charged for any of the courses.

A \$2.00 studio fee will be charged all students except those taking public school drawing (Course 5).

The courses offered are as follows:



1. PICTORIAL COMPOSITION (1.5)—Study and practice in composing a picture. One original composition required each week. **Three hours per week.** MISS GALBRAITH.

2. THEORY OF DESIGN (2)—Two hours of theory and practice of design and two hours' instruction and practical application of the principles of design to definite problems. Four hours.

MISS METZGER.

3. DRAWING FROM CASTS, LIFE PERSPECTIVE PROBLEMS, ETC. (2.5)—Five hours. MISS GALBRAITH.

4. PAINTING STILL LIFE, LIFE, LANDSCAPE WITH WORK IN ORIGINAL COMPOSITION (2.5) Five hours.

MISS GALBRAITH.

5. COURSE IN PUBLIC SCHOOL DRAWING FOR NORMAL STUDENTS (2)—This course includes a critical study of the theories and methods of teaching drawing in the public schools. The instruction is conducted upon pedagogic principles. Three periods per week. One period of two consecutive hours, and two periods of one hour each.

MISS METZGER.

6. HISTORY OF ART (2 or 3)—A study of the history of architecture, sculpture and painting. A course intended to develop an appreciation of the masters. Students will take history in connection with appreciation. Prints, photos, and lantern slides will be used.

MISS GALBRAITH.

#### EXPRESSION.

MRS. CROCKETT.

This department aims to train the student to arrive at a right understanding of literature and the appreciation of its spirit and essence through vocal interpretation. From the very beginning students are taught to analyze every piece of literature correctly, and to reveal through the voice the truth, beauty, and purpose of good literature. The student is led to realize that the reader's concept is mental; and voice and body are trained to willing obedience to this mentality.

The credit allowed toward the B. A. degree, as indicated by the figures in parentheses, is not to exceed six hours. Such credit will not be allowed on both 3 and 5.

1a and 1b. VOCAL EXPRESSION (2)—The essential training in thought, voice, and body, preparatory for vocal interpretation. Technique of mind, voice, and body. Open to a limited number

of students in the order of their application. *Prerequisite* to courses 3, 6, 7. This course is suggested as a preparation for course 2.

a. VOICE AND BODY.—This course deals with the fundamental principles involved in the correct use of voice and body in speaking and reading.

b. READING ALOUD.—Accuracy of observation and care in analysis are the principal objects to be obtained, together with the ability to read aloud simply, easily, and naturally without any effort after an art product. The readings are taken from such selections as the Old Testament, Emerson's Essays, Longfellow's Poems, and Shakespere's Plays.

2a. THE TEACHING OF READING (2)—This course is designed primarily for public school teachers, and aims to give a definite, practical method of instruction which shall apply to each grade. Admission to this course may be obtained only by special consent of the instructor.

3. VOCAL INTERPRETATION (2)—An advanced course in the vocal interpretation of literature. Designed particularly for those who intend to teach English literature. Especial attention is given to the study of Tennyson, Browning, and the dramatic monologue; forms of literature; literary analysis.

4. DRAMATIC INTERPRETATION OF SHAKESPERE'S PLAYS (2)—A careful analysis and reading of three or four plays. At the end of the year one of the plays will be given in costume by members of the class. Students in this course are advised to take English 12.

5. VOCAL EXPRESSION AS ART (2)—Students prepare selections and present them before the class for criticism. Impersonation, gesture, dialect, reading, recitation, the preparation of programs, and "cutting" and adapting selections for the platform receive special attention. Enrolment only by special permission of the instructor.

6. THE APPRECIATION OF THE DRAMA—The drama is studied as a branch of literature. Frequent readings by the instructor from masterpieces of the drama are given before the class. Members of the class take part in the presentation of plays. The class is affiliated with the *Drama League of America*, and follows the plans for study offered by the League through its bulletins.

# THE COLLEGE OF ENGINEERING

## FACULTY

JOHN CLINTON FUTRALL, M. A.

*President of the University*

WILLIAM NATHAN GLADSON, M. S., E. E., Ph. D.

*Chairman of Engineering Faculty*

JULIUS JAMES KNOCK, M. S., C. E.

*Professor of Civil Engineering*

BIRTON NEILL WILSON, M. E.

*Professor of Mechanical Engineering and Superintendent  
of Mechanic Arts*

CHARLES GEIGER CARROLL, M. A., Ph. D.

*Professor of Chemistry.*

NOAH FIELD DRAKE, C. E., Ph. D.

*Professor of Geology and Mining*

GEORGE WESLEY DROKE, M. A.

*Professor of Mathematics and Astronomy*

EDGAR FINLEY SHANNON, M. A., Ph. D.

*Professor of English*

GILES EMMETT RIPLEY, M. S.

*Professor of Physics*

VIRGIL PROCTOR KNOTT, B. C. E.

*Associate Professor of Civil Engineering*

BRAINERD MITCHELL, M. E.

*Associate Professor of Mechanical Engineering.*

LEE SEDWICK OLNEY, B. E. E.

*Associate Professor of Electrical Engineering*

WILLIAM BOYD STELZNER, E. E.

*Associate Professor of Electrical Engineering, Secretary of  
the Faculty*

WILLIAM EDGAR DUCKWORTH,

*Instructor in Mechanical Engineering*

HERMAN WAKEMAN DEAN,,

*Instructor in Mechanical Engineering*

SAMUEL SPENCE BUCKLEY,

*Instructor in Civil Engineering*

The purpose of the College of Engineering is to prepare young men for the profession of engineering. To this end four-year courses are offered in civil, electrical, mechanical, mining and chemical engineering, each leading to the appropriate bachelor's degree. A fifth year's work leads to a graduate degree.

#### ADMISSION

For the admission requirements of the College of Engineering see the general statement of the entrance requirements of the University, p. 20. For the conditions of admission for special students see p. 32.

#### COURSES OF STUDY

Following are statements of the various four-year courses in engineering. The first year is the same in all the courses, with the exception noted below.

#### FRESHMAN YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
Mathematics 1a, Algebra.....	3	Mathematics 1b, Solid Geome- try .....	3
Mathematics 2a, Plane Trigo- nometry .....	3	English 1, Rhetoric and Com- position .....	3
English 1, Rhetoric and Com- position .....	3	Physics 1, General Physics .....	3
Physics 1, General Physics .....	3	M. E. 10, Drawing.....	2
M. E. 10, Drawing.....	2	M. E. 2, 3, Shopwork.....	2
*M. E. 2, 3, Shopwork .....	2	Military Science .....	1
Military Science .....	1		

\* For M. E. 2, 3, Shopwork, students in the course in Civil Engineering substitute M. E. 11, Lettering; students in Chemical Engineering substitute Chemistry 1, Elementary Chemistry.

#### COURSE IN CIVIL ENGINEERING FOR THE DEGREE OF B. C. E.

#### SOPHOMORE YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
Mathematics 4a, Algebra.....	3	Mathematics 4b, Analytic Ge- ometry .....	3
Mathematics 7, Calculus.....	3	Mathematics 2b, Analytic Geometry .....	3
C. E. 6, 7, Surveying.....	3	Mathematics 7, Calculus.....	3
C. E. 3a, Descriptive Geometry	2	C. E. 6, 7, Surveying.....	3
C. E. 5a, Highways.....	2	C. E. 3b, Descriptive Geometry	2
Chemistry 1, Elementary Chemistry .....	3	C. E. 4b, Architectural Draw- ing .....	2
Military Science .....	1	Chemistry 1, Elementary Chemistry .....	3
		Military Science .....	1

## JUNIOR YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
C. E. 14, Structural Mechanics	5	C. E. 14, Structural Mechanics	5
C. E. 10, Railroad Engineering	2	C. E. 10, Railroad Engineering	2
C. E. 11, Field Practice	2	C. E. 11, Field Practice	2
Geology 5b, Blow-pipe Analysis	2	M. E. 27b, Hydraulics	2
C. E. 13, Technical Drawing	2	C. E. 13, Technical Drawing	2
Elective	3	Elective	3
Military Science	1	Military Science	1

## SENIOR YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
C. E. 16, Roofs and Bridges	4	C. E. 16, Roofs and Bridges	3
C. E. 15a, Masonry Construction	2	C. E. 17, Technical Drawing	2
C. E. 17, Technical Drawing	2	C. E. 18b, Waterworks Engineering	3
C. E. 18a, Sanitary Engineering	2	C. E. 20b, Field Practice	2
C. E. 19a, Engineering Laboratory	2	Elective	3
C. E. 20a, Reinforced Concrete	2	Thesis	2
Elective	3		

## COURSE IN CHEMICAL ENGINEERING FOR THE DEGREE OF B. CH. E.

## SOPHOMORE YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
Chemistry 2, Inorganic Chemistry	3	Chemistry 2, Inorganic Chemistry	3
Chemistry 5a, Qualitative Analysis	3	Chemistry 6b, Qualitative Analysis	3
Mathematics 4a, Algebra	3	Mathematics 4b, Analytic Geometry	3
Mathematics 7, Calculus	3	Mathematics 7, Calculus	3
German 1, Elementary German or Physics 2, General Physics	3	German 1, Elementary German or Physics 2, General Physics	3
M. E. 2, 3, Shop Work	3	M. E. 2, 3, Shop Work	3

## JUNIOR YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
Chemistry 4, Organic Chemistry	4	Chemistry 4, Organic Chemistry	4
Chemistry 7, Qualitative Analysis	3	Chemistry 7, Qualitative Analysis	3
Chemistry 11, Physical Chemistry	2	Chemistry 11, Physical Chemistry	2
M. E. 14, Machine Design	3	M. E. 14, Machine Design	3
M. E. 22a, Theoretical Mechanics	4	M. E. 22b, Mechanics of Materials	4

## SENIOR YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
Chemistry 16, Industrial Chemistry .....	3	Chemistry 16, Industrial Chemistry .....	3
E. E. 1, Electrical Engineering..	3	E. E. 1, Electrical Engineering	3
E. E. 19, Electrical Laboratory	2	E. E. 19, Electrical Laboratory	2
M. E. 17, Experimental Engineering .....	2	M. E. 17, Experimental Engineering .....	2
M. E. 24a, Steam Engine and Boiler .....	3	M. E. 24b, Gas Engine and Boiler .....	3
Elective .....	5	Elective .....	5
Thesis .....		Thesis .....	

## COURSES IN ELECTRICAL ENGINEERING FOR THE DEGREE OF B. E. E.

## SOPHOMORE YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
Mathematics 4a, Algebra .....	3	Mathematics 4b, Analytic Geometry .....	3
Mathematics 7, Calculus .....	3	Mathematics 7, Calculus .....	3
Physics 2, General Physics.....	3	Physics 2, General Physics.....	3
Physics 3, Physical Laboratory	1	Physics 3, Physical Laboratory	1
Chemistry 1, Inorganic Chemistry .....	3	Chemistry 1, Inorganic Chemistry .....	2
E. E. 2, Drawing.....	2	Chemistry 5, Qualitative Analysis .....	1
E. E. 20, Illuminating Engineering, or E. E. 11, Telegraphy, Telephony, and Signals	2	E. E. 2, Drawing .....	2
Military Science .....	1	E. E. 20, Illuminating Engineering, or E. E. 11, Telegraphy, Telephony and Signals	2
		Military Science .....	1

## JUNIOR YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
English 13, English Composition, or German 1, Elementary German, or French 1, Elementary French, or Spanish 1, Elementary Spanish.....	3	English 13, English Composition, or German 1, Elementary German, or French 1, Elementary French, or Spanish 1, Elementary Spanish.....	3
M. E. 24a, Steam Machinery....	3	M. E. 25b, Oil and Gas Machinery .....	3
Physics 4, Mechanics, or C. E. 14, Structural Mechanics, or M. E. 22a, Theoretical Mechanics .....	4	Physics 4, Mechanics, or C. E. 14, Structural Mechanics, or M. E. 23b, Mechanics of Materials .....	4
E. E. 7, Dynamo Machinery .....	3	E. E. 7, Dynamo Machinery.....	3
E. E. 5, Electrical Laboratory	2	E. E. 5, Electrical Laboratory..	2
E. E. 3, Electrical Design.....	2	E. E. 3, Electrical Design.....	2
Military Science .....	1	Military Science .....	1



## COURSES OF STUDY

101

## SENIOR YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
E. E. 8a, Alternating Currents...	3	E. E. 9b, Polyphase Currents...	3
E. E. 6, Electrical Laboratory...	2	E. E. 6, Electrical Laboratory...	2
E. E. 4, Electrical Design.....	2	E. E. 4, Electrical Design.....	2
M. E. 17, Experimental Engineering .....	2	M. E. 17, Experimental Engineering .....	2
Elective .....	7	Elective .....	7
E. E. 13a, Power Stations.....	2	E. E. 14b, Electrical Transmission .....	2
E. E. 15a, Alternating Current Motors .....	2	E. E. 16b, Hydro-Electric Developments .....	2
Economics 9a, Engineering Law .....	3	Economics 9b, Engineering Law .....	3
E. E. 12a, Telephone Laboratory .....	1	E. E. 4b, Photometry .....	2
E. E. 18, History of Engineering .....	2	C. E. 8b, Surveying .....	3
		E. E. 19b, Electric Railways.....	3

## COURSE IN MECHANICAL ENGINEERING FOR THE DEGREE OF B. M. E.

## SOPHOMORE YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
Mathematics 4a, Algebra.....	3	Mathematics 4b, Analytic Geometry .....	3
Mathematics 7, Calculus.....	3	Mathematics 7, Calculus.....	3
Chemistry 1, Inorganic Chemistry .....	3	Chemistry 1, Inorganic Chemistry .....	2
C. E. 3a, Descriptive Geometry..	2	Chemistry 5, Qualitative Analysis .....	1
M. E. 4 and 5, Forge and Machine Shop .....	2	M. E. 4 and 5, Forge and Machine Shop .....	2
M. E. 14, Machine Design.....	3	M. E. 14, Machine Design.....	4
Military Science .....	1	C. E. 8b, Surveying .....	2
		Military Science .....	1

## JUNIOR YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
M. E. 22a, Theoretical Mechanics .....	4	M. E. 22b, Mechanics of Materials .....	4
or C. E. 14, Structural Mechanics .....	5	M. E. 24b, Gas Engines and Producers .....	3
M. E. 24a, Steam Engines and Boilers .....	3	M. E. 17, Experimental Engineering .....	2
M. E. 17, Experimental Engineering .....	2	M. E. 15b, Machine Design.....	4
M. E. 12a, Mechanical Drawing .....	2	M. E. 27b, Hydraulics.....	2
Shop Work .....	2	Elective .....	1
Elective .....	3	Military .....	1
Military Science .....	1		

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## SENIOR YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
E. E. 19, Electrical Laboratory..	2	E. E. 19, Electrical Laboratory..	2
E. E. 1, Electrical Engineering..	3	E. E. 1, Electrical Engineering..	3
M. E. 26, Machine Design.....	4	M. E. 26, Machine Design.....	4
M. E. 18, Experimental Engi- neering .....	2	M. E. 18, Experimental Engi- neering .....	2
M. E. 28a, Hydraulic Machin- ery .....	2	Elective .....	4
Elective .....	3	Thesis .....	1

## COURSE IN MINING ENGINEERING FOR THE DEGREE OF B. M. E.

## SOPHOMORE YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
Chemistry 1, General Chem- istry .....	3	Chemistry 1, General Chem- istry .....	3
Mathematics 4a, Algebra.....	3	Mathematics 4b, Anal. Ge- ometry .....	3
Mathematics 7, Calculus .....	3	Mathematics 7, Calculus.....	3
Geology 1a, Geography.....	3	Geology 1b, Dynamic and Struc- tural .....	3
Geology 5a, Crystallography ..	3	Geology 5b, Mineralogy .....	3
Foreign Language .....	3	Foreign Language .....	3
Military Science .....	1	Military Science .....	1

## JUNIOR YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
Chemistry 5, Qualitative Analysis .....	3	Chemistry 6, Qualitative Analysis .....	3
Geology 2, Historical Geology.....	3	Geology 2, Historical Geology.....	3
Geology 6a, Economic Geology..	3	Mining 1b, Mining Operations....	3
C. E. 6, 7, Surveying.....	3	C. E. 6, 7, Surveying.....	3
E. E. 1, Electrical Engineering	3	E. E. 1, Electrical Engineering	3
Foreign Language.....	3	Foreign Language .....	3
Military Science .....	1	Military Science .....	1

## SENIOR YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
Geology 7, Petrology .....	3	Geology 7, Petrology.....	3
Mining 2a, Ore Dressing.....	3	Metallurgy 1b, General Metal- lurgy .....	3
C. E. 3a, Descriptive Geometry..	2	Metallurgy 2b, Assaying.....	1
C. E. 15a, Masonry Construc- tion .....	2	C. E. 3b, Descriptive Geometry..	2
Chemistry 7, Quantitative Analysis .....	2	M. E. 27b, Hydraulics.....	2
Foreign Language .....	3	Foreign Language .....	3
Elective .....	3	Elective .....	3

# COURSE IN HIGHWAY ENGINEERING FOR THE DEGREE OF B. C. E. IN HIGHWAYS

## FRESHMAN YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
Mathematics 1a, Algebra .....	3	Mathematics 1b, Solid Geometry .....	3
Mathematics 2a, Trigonometry..	3	Mathematics 2b, Analytic Geometry .....	3
English 1 .....	3	English 1 .....	3
Chemistry 1 .....	3	Chemistry 1 .....	3
C. E. 2, Drawing and Lettering ..	2	C. E. 2, Drawing and Lettering ..	2
Economics 1 .....	3	Economics 1 .....	3
Total .....	17	Total .....	17

## SOPHOMORE YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
Mathematics 4a, Algebra .....	3	Mathematics 4b, Analytics .....	3
Mathematics 7, Calculus .....	3	Mathematics 7, Calculus .....	3
C. E. 6 and 7, Surveying .....	3	Surveying (C. E. 6 and 7) .....	3
C. E. 3a, Descriptive Geometry ..	2	Chemistry 5 and 6, Qualitative and Quantitative Analysis .....	4
C. E. 5a, Highways .....	2	Physics 1, General Physics .....	3
Physics 1, General Physics .....	3		
Total .....	16	Total .....	16

## JUNIOR YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
C. E. 14, Structural Mechanics ..	5	C. E. 14, Structural Mechanics ..	5
C. E. 10a, Railroad Engineering ..	2	M. E. 27b, Hydraulics .....	2
C. E. 11a, Field Practice .....	2	C. E. 22b, Highway Engineer- ing .....	4
Geology 5, Blowpipe Analysis .....	2	C. E. 13, Technical Drawing .....	2
C. E. 13, Technical Drawing .....	2	M. E. 24, Gas Engines and Road Machinery .....	3
M. E. 24, Steam Engines and Boilers .....	3		
Total .....	16	Total .....	16

## SENIOR YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
C. E. 16, Roofs and Bridges .....	4	C. E. 23b, Highway Bridges and Culverts .....	4
C. E. 15a, Masonry Construc- tion .....	2	Economics 9, Law of Contracts ..	3
C. E. 17, Technical Drawing .....	2	Chemistry 8, Oils and Bitumens ..	3
C. E. 19a, Engineering Labora- tory .....	2	C. E. 24b, Highway Engineer- ing and Materials Laboratory ..	2
C. E. 20a, Reinforced Concrete ..	2	Geology 1, General Geology .....	3
Geology 1, General Geology .....	3	*Thesis .....	1
*Thesis .....	1		
Total .....	16	Total .....	16

\* Including inspection trips and reports.

## REQUIREMENTS FOR THE GRADUATE DEGREES IN ENGINEERING

The degrees of C. E., E. E., M. E., and Ch. E. may be conferred on students who follow the corresponding undergraduate courses with a year of graduate work in the College of Engineering.

The graduate courses will comprise a principal subject, based on the undergraduate course already pursued, and two subordinate subjects, one or both of which must be closely related to the principal subject. The graduate course must amount to not less than fifteen hours per week as counted in undergraduate work. Candidates for these degrees must also present a satisfactory thesis.

These degrees will also be given to graduates of the University in civil, electrical, mechanical and chemical engineering who have been in successful practice of their profession for three years, and who present a statement of their work, together with a satisfactory thesis.

## TRADE COURSE OFFERED

The University of Arkansas offers to the young men of the state short and trade courses as follows:

Architectural Drawing.

Automobile Machinists' Course.

Mechanical Drawing.

Pattern Making.

Power Plant Engineering.

Short Course in Civil Engineering.

Short Course in Electrical Engineering.

For entrance to the short course in engineering and the trades courses a fair common school education is all that is necessary.

A special bulletin describing Trades Courses and short courses in Engineering is issued by the University and may be had by writing to the President of the University.

## EQUIPMENT

*Civil Engineering Laboratory and Equipment.* The instrument laboratory for this department is located on the first floor of Engineering Hall, and is provided with all the necessary instruments for work in land, railroad, and city surveying and office

work. The equipment of the field instruments has been so selected as to afford students the opportunity of becoming familiar with the instruments of the different manufacturers. Among the instruments there are a number of engineers' transits and Y levels, theodolites, transit and solar attachment, compasses, hand levels, standard and ordinary steel tapes, plane tables, sextant, aneroid and mercurial barometers, etc. An equipment for practical astronomy has been added, consisting of a large altazimuth, reading to seconds by levels and micrometers; a sidereal clock with break thread attachment; and a chronograph reading to tenths of seconds.

The laboratory for testing materials of construction and for work in experimental hydraulics is located in the northwest corner of the basement of Engineering Hall. It is a well lighted room having a floor space of 2,450 square feet.

The equipment for testing the quality and strength of cements and mortars includes one 2,000-pound tension machine, one compression and transverse machine, brass molds for tension compression and transverse test pieces, storage tanks and apparatus for testing mortars, scales for gravity and activity, and for accelerated tests.

For steel testing the laboratory contains a 4,000-pound tension machine and a 2,000-pound transverse machine for tests on bars, and a Fremont impact testing machine.

The equipment for experiments in hydraulics consists of a Pelton water wheel, a hydraulic engine, water meters, weirs, and other apparatus.

The laboratory is also well equipped for making blue and brown prints of any size up to 36x64 inches.

New equipment for testing materials for roads and pavements has recently been added. This equipment is modeled after that used in the laboratory of the Office of Public Roads at Washington, D. C., and includes an impact testing machine, a compression impact testing machine, a diamond core drill and press, a bituminette machine, a ball grinding machine, a rattler for pavements, an attrition machine for broken stone, and other apparatus.

*Electrical Engineering Laboratories.* The dynamo laboratory affords excellent facilities for experimental work with practical

machinery. It is located in the east end of the basement of the Engineering Hall.

The power is supplied by a 30-horsepower, vertical type, double cylinder gasoline engine and a 20 K. W. induction motor. A 60-cell, 300-ampere-hour storage battery supplies current for experiments in which absolutely steady power is desired.

There are direct current dynamos and motors of the constant current and constant potential types, transformers, converters, synchronous and induction motors, with a liberal supply of measuring instruments for use with the various machines. Single, two and three-phase alternators supply current at various voltages and frequencies.

The senior laboratory is located on the first floor of Engineering Hall, and is supplied with direct current at 110, 220 and 500 volts, and alternating current, single phase, at 50, 110 or 220 volts and 60 cycles; two phase, 60 cycle at 110 or 220 volts; three phase at 110 or 220 volts, with a frequency of 60 to 113 cycles per second. A high tension testing transformer supplies current at any voltage up to 120,000 volts for testing of insulators, while standard cells, a Kelvin balance and a potentiometer furnish means for calibrating the laboratory measuring instruments.

Students are also permitted to inspect the plant of the Fayetteville Electric Light & Power Company, take measurements and make tests on it. Its primary mains supply the electrical laboratory with alternate current at 60 cycles and 2,000 volts.

The photometric laboratory, which also serves as a photographic and X-ray dark-room, is supplied with a standard photometer bar, Lummer-Brodhun screen and Amylacetate standard lamp.

*Mechanical Engineering Laboratory.* The laboratory contains the following machinery: One 35-horsepower compound automatic steam engine, one Hornby-Akroyd oil engine, one Kerr steam turbine, one slide valve steam engine, one 10-horsepower Weber gasoline engine, three small Cardinal gas engines made in U. of A. shops, one 35-horsepower Westinghouse compound steam engine,  $4\frac{1}{2} \times 3\frac{1}{2} \times 4$  duplex steam pump, one 50-horsepower Wheeler condenser with air, water, and circulating pumps, one Pulsometer steam pump, one Westinghouse air compressor, and one 60,000-pound Rheile testing machine, for testing materials



in tension and compression, such as wood, steel, and cast iron. This machine is also equipped for testing large beams of steel, concrete or timber.

The laboratory is well provided with apparatus for experimental work, including a Mahler bomb calorimeter for testing fuels, an Orsat apparatus for flue gas analysis, a Junker calorimeter, an Olsen oil testing machine, a viscosimeter, a flash point tester, steam calorimeters, engine indicators, injectors, thermometers, pressure gauges, measuring tanks, feed water heater, water meters, scales, etc.

The steam boilers used for heating the University buildings are arranged so as to be available for experimental work, and the Corliss shop engine is also used for purposes of instruction.

By special arrangement with the Fayetteville Water Company, and the City Electric Light and Power Company, students are allowed to run tests on these plants.

*Mechanical Hall.* Mechanical Hall is built of brick, is forty feet wide and one hundred and fifty-five feet in length, with an ell thirty-five by forty feet, and contains the machine shop, wood shop, foundry and forge shop. The shops will accommodate about seventy-five students at one time. Adjoining on the east is a boiler room fifty-four by eighty-eight feet.

The machine shop contains a Corliss engine, which runs the machinery in the whole building, a large iron planer, a shaper, several lathes of different sizes and makes, drill press, grinding machines, milling machine, and a good supply of hand tools, benches and materials.

The forge shop contains eight Buffalo forges with down draft, which takes the smoke away through an underground pipe, thus avoiding the smoke and dirt of the ordinary blacksmith shop. It also contains a shearing and punching machine, eight anvils of different weights, and all the necessary blacksmith tools for the eight forges.

The wood shop contains one buzz planer, one large cylinder planer, circular saw, band saw, five smaller lathes, one 18-inch pattern maker's lathe, one double column shaper and twenty-six benches, each equipped with a complete set of carpenter's tools.

The foundry contains one Colleau cupola with a capacity of one and one-half tons of iron per hour, one brass furnace of one

hundred and fifty pounds capacity; Buffalo pressure blower and core oven.

The boiler room contains three fire tube boilers, and three water tube boilers, besides feed pumps, injectors, measuring tanks, etc.

The various departments of the shop building afford facilities for giving practical instruction to seventy-five students at one time.

# DESCRIPTION OF COURSES OFFERED IN THE COLLEGE OF ENGINEERING

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Courses designated by a numeral followed by the letter *a* are given during the first semester.

Courses designated by a numeral followed by the letter *b* are given during the second semester.

Courses designated by a numeral alone are continued through both semesters. Credit for one semester's work in such courses will not be granted.

The number in parenthesis after the name of a course indicates the number of hours of credit given for completion of the course.

## CIVIL ENGINEERING

PROFESSOR KNOCH, ASSOCIATE PROFESSOR KNOTT, MR. BUCKLEY.

The course in engineering, leading to the B. C. E. degree, is outlined on p. 89.

The courses in civil engineering include theoretical instruction accompanied by illustrations and as much of engineering practice as possible. The courses will give the student a knowledge of fundamental principles that will enable him to enter intelligently upon professional practice.

The special technical studies which are offered may be grouped under the heads of surveying, applied mechanics, road and railroad engineering, hydraulic engineering, bridge engineering, and sanitary engineering.

The work in surveying extends over three years. It embraces land surveying, leveling and United States public land surveys, during the sophomore year; topography, railroad reconnaissance and location, during the junior year; triangulation and geodesy, during the senior year. Much time is devoted to practice in the field and drafting room, this work being carried on parallel with the class-room work. Each year a party of engineering students goes into camp one week for practice in surveying and locating railway lines.

## HIGHWAY ENGINEERING.

In recent years many problems have arisen in connection with the construction and maintenance of highways, creating a demand for men who have been trained for this particular branch of engineering. The course in highway engineering has been arranged to aid in training engineers for this line of work.

The first two years of this course are practically identical with that of civil engineering. In the last two years subjects especially related to highway engineering have been introduced, and other subjects which are considered of less importance in highway work have been dropped from the regular course in civil engineering.

A well equipped laboratory has been provided for making all the standard tests in accordance with the practice of the United States Office of Public Roads.

All students are required to spend the vacation between their junior and senior years with the State Highway Engineer. Actual expenses will be allowed for this work.

2. DRAWING AND LETTERING (2)—Selection and care of instruments; conventional representation of materials; drawing and tracing plans, profiles, and maps; free-hand lettering; pen and colored topography. Two afternoons per week throughout the year.

ASSOCIATE PROFESSOR KNOTT.  
MR. BUCKLEY.

3a and 3b. DESCRIPTIVE GEOMETRY (2)—Recitation and practice, first and second terms. Text-book: Church's *Descriptive Geometry*. Th. 1, M. 5-7.

PROFESSOR KNOCH  
MR. BUCKLEY.

4b. ARCHITECTURAL DRAWING (2)—Elementary course in architecture; drawing plans and elevations of simple structures; analysis of plans. T. W. 5-7.

MR. BUCKLEY.

5a. HIGHWAYS (2)—The location, construction, and maintenance of common, Macadam and Telford roads; brick, stone, wood, asphalt and bituminous pavements for city streets. Text-book: Baker's *Roads and Pavements*. Engineering Hall. T. Th. 2.

MR. BUCKLEY.

6. SURVEYING (with 7) (3)—First and part of second semester. Care, use, and adjustment of instruments; use of chain,

tape, compass, transit, solar attachment, level, sextant, plane-table; land surveying, contouring, laws and instructions relating to the surveys of the public domain. M. W. I.

ASSOCIATE PROFESSOR KNOTT.

MR. BUCKLEY.

7. FIELD PRACTICE (1)—Exercises in land, topographical, and city surveying. One afternoon per week throughout the year. Th. 5-8.

MR. BUCKLEY.

8b. SURVEYING (3)—Care, use, and adjustments of instruments; platting field notes. Running grade lines and simple curves for electric railways. Recitation one hour and field practice two hours per week. *Lecture for E. E. students. Prerequisite: Plane Trigonometry.*

ASSOCIATE PROFESSOR KNOTT.

MR. BUCKLEY.

9b. SURVEYING (1)—Leveling, land surveying, and land drainage. Required of students in the B. S. A. course. Engineering Hall. T. F. 3, W. 5-8.

MR. BUCKLEY.

10. RAILROAD ENGINEERING (2)—Preliminary surveys and location; transition curves, yards and turnouts; estimate of earthwork and materials used in construction; the economics of railroad location and management. Text-books: Searles' *Field Engineering* and Crandall's *Transition Curve and Earthwork Computations*. First semester; second semester. Raymond's *Railroad Engineering*, Part II. T. Th. 3.

PROFESSOR KNOCH.

11. FIELD PRACTICE (2)—Location of curves, turnouts, and Y's; measurements of embankments and cuts, and computation of volumes. One afternoon per week throughout the year. F. 5-8.

PROFESSOR KNOCH.

12. RAILROAD SURVEY—One week, twelve hours per day. Actual field practice in reconnaissance, preliminary survey, location, and topographical survey.

13. DRAWING (2)—Lectures and practice. Shades, shadows, and perspective. Topographical and railroad maps from actual surveys; masonry dams, structural details, and working drawings for designs. M. Tu. 5-7.

ASSOCIATE PROFESSOR KNOTT.

14. **STRUCTURAL MECHANICS** (5)—A course especially designed for students in civil engineering. The theory of stresses and strains, with practical applications to the design of structures. Text-book: Church's *Mechanics of Engineering*. M. F. 2.

ASSOCIATE PROFESSOR KNOTT.

15a. **MASONRY CONSTRUCTION** (2)—Use of lime and hydraulic cement mortars; stone and brick masonry; concrete; foundations on land and under water; coffer-dams, cribs and caissons. Text-book: Baker's *Masonry Construction*. M. W. 4.

ASSOCIATE PROFESSOR KNOTT.

16. **ROOFS AND BRIDGES** (4 and 3)—Theory of computation of stresses by both analytical and graphical methods; truss computations, designs, and bills of materials for roof truss and railroad bridge. Text-books: Merriman and Jacoby's *Roofs and Bridges*, Parts I, II, and III. M. Tu. W. F. 1.

PROFESSOR KNOCH.

17. **TECHNICAL DRAWING** (2)—Lectures and practice four hours per week throughout the year. Right and oblique arches; drawings for computations of course 16. T. W. 5-7.

PROFESSOR KNOCH.

18a. **SANITARY ENGINEERING** (2)—Calculation and special details of construction of sewers; separate and combined systems of sewers; purification of sewage; municipal and domestic sanitation. Text-book: Folwell's *The Designing, Construction, and Maintenance of Sewerage Systems*. M. 3, Th. 1.

PROFESSOR KNOCH.

18b. **WATERWORKS ENGINEERING** (3)—A study of systems of water supply; collection, purification and distribution of water; location of waterworks, with details of construction and cost estimate; turbines and pumping engines. Text-book: Folwell's *The Designing, Construction, and Maintenance of Water-Supply Systems*. M. W. F. 1.

PROFESSOR KNOCH.

19a. **ENGINEERING LABORATORY** (2)—Tests of strength and other properties of materials of construction, tensile and crushing tests of brick, stone and cement; flow of water through pipes, elbows, valves, and measurement of water by means of weirs and meters. F. 5-8.

MR. BUCKLEY.



20a. REINFORCED CONCRETE (2)—Recitations, lectures, and practical problems on the theory and design of various structures in reinforced concrete. Th. 5-8.

ASSOCIATE PROFESSOR KNOTT.

20b. FIELD PRACTICE (2)—Topographical survey, triangulation, precise leveling, and practical astronomy. Th. 5-8.

ASSOCIATE PROFESSOR KNOTT.

21. CONTRACTS AND SPECIFICATIONS (3)—Elective for seniors in Engineering. Lectures and recitations. Text-books: Johnson's *Contracts and Specifications*; Waite's *Architectural and Engineering Jurisprudence*.

PROFESSOR KNOCH.

22b. HIGHWAY ENGINEERING (4)—Lectures and reports; road laws, economies and design of roads and pavements; tax, bond issues, and assessments; drainage; foundations; comparison of the different types of roads; road surveying and design. *Prerequisite: C. E. 5, 6, 7, 10a, 11a.*

23b. HIGHWAY BRIDGES AND CULVERTS (4)—Lectures and problems in the design of highway bridges; determination of waterways; construction and maintenance of highway bridges and culverts. *Prerequisite: C. E. 13, 14, 16.*

24. HIGHWAY ENGINEERING LABORATORY (2)—Tests of gravel and broken stone to determine hardness, toughness, cementing power, and resistance to abrasion; rattler tests and absorption tests for paving brick; tests of sand and clay; inspection and tests of bituminous materials. One afternoon per week, second term.

## ELECTRICAL ENGINEERING

PROFESSOR GRAYSON, ASSOCIATE PROFESSOR OLNEY, ADJUNCT

PROFESSOR STELZNER.

The course in engineering leading to the B. E. E. degree is outlined on page 100.

In the courses in electrical engineering general and technical subjects are combined in such proportions as to furnish a good foundation for the profession of electrical engineering. Sufficient theory is taught in the class-room and illustrated by laboratory experiments to give the student a knowledge of the un-

derlying principles. Shop experience with manufacturing companies, to give the student specific practical training, is desirable. Such training should be obtained during vacations and after graduation.

1. ELECTRICAL ENGINEERING (3)—Recitations and demonstrations. A general elementary course in electrical machinery, dynamos, motors, transformers, primary and storage batteries, electric signals, mine haulage, and illumination. This course may be elected for one-half year. *Required of mining, chemical, and mechanical engineering students. Elective in other courses. Prerequisite:* Physics 1. E. H. 27. M. W. F. 3.

ADJUNCT PROFESSOR STELZNER.

2. DRAWING (2)—Recitations and practice four hours a week. Accurate mechanical drawings from electrical machinery; architectural drawings and wiring plans, perspective, line shading; orthographic projections. E. H. 24, Th. F. 5, 6, and 7.

ASSOCIATE PROFESSOR OLNEY.

3. ELECTRICAL ENGINEERING DESIGN (2)—Recitations and practice four hours a week. Working drawings of electrical machinery; design of direct current machinery; specifications and estimates. E. H. 25, M. 5, 7, W. 5.

ASSOCIATE PROFESSOR OLNEY.

4. ELECTRICAL ENGINEERING DESIGN (2)—Recitations and drawing, four hours a week. Design of alternating current machinery; motors, transformers and generators. *Prerequisite:* E. E. 3. E. H. 25, Th. 5-7, W. 6.

ASSOCIATE PROFESSOR OLNEY.

4b. PHOTOMETRY OF ELECTRIC LAMPS (2)—Lectures and recitations on modern photometers and photometric methods. *Prerequisite:* Physics 1 and 2, E. E. 7. 5, and 3. E. H. 3, M. Tu. 5, 6, 7.

PROFESSOR GLADSON.

5. ELECTRICAL LABORATORY (2)—One afternoon a week throughout the year. An extended course in magnetic and electrical measurements; current strength, electro-motive force and resistance; use and calibration of instruments; explorations of magnetic fields; testing of direct current dynamos and motors; primary and storage batteries. E. H. 3, Tu. F. 5-8..

ADJUNCT PROFESSOR STELZNER.

6. ELECTRICAL LABORATORY (2)—One afternoon a week throughout the year. A full experimental course in operating and testing direct and alternating current machines; transmission starting and transformation of electrical energy. Special exercises suited to the preparation and object of the student. E. H. 3, M. Th. 5-8.

ADJUNCT PROFESSOR STELZNER.

7. DYNAMO-ELECTRIC MACHINERY (3)—Recitations confined chiefly to direct current apparatus, including types of motors, generators, and transformers; designs, calculations, construction, testing, and operating. Text-book, *Dynamo-Electric Machinery*, by Sheldon and Hausmann. M. W. F. 2. Prerequisites: Physics 1 and 2.

PROFESSOR GLADSON.

8a. THEORY OF ALTERNATING CURRENTS (3)—Recitations and lectures on alternating current generators, motors, converters, measurements, the theory of design, and calculations. Text-book: *Alternating Current Mathematics*, by Sheldon, Mason, and Hausmann. E. H. 11, M. W. F. 1.

PROFESSOR GLADSON.

9b. DYNAMO-ELECTRIC CURRENTS (3)—Recitations and lectures three hours a week. Text-book, *Alternating Current Machinery*, by Sheldon, Mason, and Hausmann. Reference books: *Alternating Current Motors*, McVester; *Alternating Current Phenomena*, Steinmetz; *Velocities and Vector Diagrams*, W. Cramp and C. F. Smith; technical journals. E. H. 11, M. W. F. 1.

PROFESSOR GLADSON.

10b. ELECTRICAL RAILWAYS (2)—Recitations and lectures. Text-books, *Electrical Railway Engineering*, by C. F. Harding. Reference books, *Electric Railway Engineering*, Parshall and Hobart. E. H. 27, Tu. Th. 2.

ADJUNCT PROFESSOR STELZNER.

11. TELEPHONE, TELEGRAPHY, RAILWAY SIGNALS, FIRE ALARMS AND RELATED APPARATUS (2)—Recitations. Text-books: McMeen and Miller's *Telephone and Telegraph Systems* International Correspondence Schools pamphlets; *Automatic Block Signals* by Scott. E. H. 24, Tu. Th. 4. Prerequisites: Physics 1.

ASSOCIATE PROFESSOR OLNEY.

12a. TELEPHONE LABORATORY (1)—Work with the telephone, telegraph, wireless telegraphy and telephony, railway signals and allied apparatus. E. H. 24, F. 3-4.

ASSOCIATE PROFESSOR OLNEY.

13a. POWER STATIONS (2)—Lectures and recitations. Selection of machinery for power stations; steam, hydraulic, gas and electric, station construction, operation and management. E. H. 11, Tu. Th. 3.

PROFESSOR GLADSON.

14b. ELECTRIC TRANSMISSION AND DISTRIBUTION (2)—Recitations and lectures. A study of the different methods of electrical power distribution for light, railway or stationary power; long distance transmission. E. H. 11, M. Tu. 3.

PROFESSOR GLADSON.

15a. ALTERNATING CURRENT MOTORS (2)—Lectures and recitations. *This course must be preceded by courses E. E. 7 and E. E. 8a.* E. H. 11, Tu. Th. 1.

PROFESSOR GLADSON.

16b. HYDRO-ELECTRIC DEVELOPMENTS (2)—Lectures and recitations. A study of the methods of investigation power possibilities of flowing water, collecting data, selecting power sites, power house, transmission lines and machinery. *Prerequisite:* E. E. 7 and E. E. 8a. E. H. 11, Tu. Th. 1.

PROFESSOR GLADSON.

17. ELECTRICAL ENGINEERING SEMINAR.—Students who attend and take part in 75 per cent of the meetings of the University Branch of the *American Institute of Electrical Engineers* during their junior and senior years, and prepare and present an acceptable original paper on some engineering subject will be given one hour's credit.

18. HISTORY OF ENGINEERING (2)—The early development of engineering; as traced from history and from the remains of ancient works; development of engineering in later periods and its growth into a separate profession; the effect on civilization, general history and economic problems of the several inventions and other improvements which have marked the development of engineering; study of lives of some famous engineers; also the development of the general technical principles of engineering. E. H. 9.

ADJUNCT PROFESSOR STELZNER.

19. **ELEMENTARY ELECTRICAL LABORATORY (2)**—One afternoon a week. This course is intended to illustrate the application of electrical machinery for power purposes and includes simple testing, operating and care of direct and alternating current machinery. Required of mining, chemical, and mechanical engineering students. E. H. 3, F. 5-8.

20. **ILLUMINATING ENGINEERING (2)**—Recitations and lectures on the different methods of artificial illumination, sources intensity and distribution of light; physiological problems involved. E. H. 24, Tu. Th. 2.

ASSOCIATE PROFESSOR OLNEY.

**INSPECTION TRIP.**—Once each year visits of inspection are made by the senior class to power houses and large electrical installations; or a week is spent in actual practice work in determining hydro-electric possibilities of some stream.

## MECHANICAL ENGINEERING

PROFESSOR WILSON, ASSOCIATE PROFESSOR MITCHELL, MR. DEAN, MR. DUCKWORTH, MR. BETHILL, MR. CRIPPIN.

The course in engineering leading to the B. M. E. degree is outlined on page 101.

The courses in mechanical engineering give instruction in mechanics, machine design, the theory of steam and gas engines, hydraulic machinery, railroad engineering, etc., and provide suitable preparation for the management of processes or plants where machinery is used extensively. In practical application of theory, much time is devoted to shop work, drawing, and laboratory practice.

The courses in this department that can be profitably pursued without advanced mathematics are the shop and manual training courses from 1 to 9 inclusive, the drawing and lettering courses from 10 to 13 inclusive, courses in the elementary theory of steam and gas engines, and their operation. M. E. 16, 20, 21, heating and ventilation, M. E. 30, and the course in efficiency, M. E. 33b.

1a. **SHOP WORK, CARPENTRY**—A course in carpentry and joinery laid out to meet the requirements of students in agriculture. M. 5, 6, 7.

MR. DUCKWORTH.

2. **FOUNDING**—Green sand moulding; melting and pouring brass and iron; core making. This work is made as practical as possible. M. Tu. Th. F. 1-7; W. S. 1-4. **MR. DUCKWORTH.**

3. **PATTERN-MAKING**—Practice in making patterns. Care and used of wood working machinery. M. Tu. Th. F. 1-7.

**MR. DUCKWORTH.**

4. **FORGING**—Management of fires; drawing and welding; riveting and tempering; case-hardening and annealing. M. Tu. Th. F. 1-7; W. S. 1-4.

**MR. DUCKWORTH.**

5. **MACHINE SHOP PRACTICE**—Exercises in chipping and filing; practical work in turning; planing, drilling; grinding; use of milling machine; erection of machinery. M. Tu. Th. F. 1-7; W. S. 1-4.

**MR. DEAN.**

6. **MANUAL TRAINING (1-2)**—A beginner's course in manual training, suitable for teachers intending to teach manual training in the primary grades, and to familiarize themselves with the use of tools. This course is made up of work in paper cutting, folding and pasting, book-binding and sloyd. M. Tu. Sat. 1, 2, 3.

**MR. DUCKWORTH.**

7. **MANUAL TRAINING (1-2)**—A continuation of M. E. 6 with exercises in wood carving, turning, and elementary cabinet making. M. Tu. Sat. 1, 2, 3,

**MR. DUCKWORTH.**

8. **MANUAL TRAINING (1-2)**—A course for advanced teachers in wood work. Thin wood construction, thick wood construction, joining and cabinet work, wood finishing. M. Tu. Sat. 1, 2, 3.

**MR. DUCKWORTH.**

9. **ADVANCED WORK** in any of the above courses.

**MR. DUCKWORTH.**

**MR. DEAN.**

(L. C.) A material fee of \$3.00 is charged for each shop course.

10. **ENGINEERING DRAWING (2)**—Free-hand lettering, practice in use of instruments, principles of orthographic projection, technical sketching of machine parts, working drawing from sketches, tracing, working drawings, blue printings.

**MR. BETHEL.**



11. LETTERING (1-2)—Titles for maps and drawings, pen and colored topography. M. W. F. 1-3. *Required of C. E. freshmen; elective for other engineering and art students.*

12a. MECHANICAL DRAWING (2)—Perspective and isometric drawings; intersections; developments; detail drawing; blue printing. M. Tu. Th. F. 5-7.

13. ARCHITECTURAL DRAWING (2)—Architectural lettering, conventions used in architectural drawing, standard details of buildings, the order of architecture, complete plans of a building from sketches.  
MR. BETHEL.

14. MACHINE DESIGN (3)—Kinematics of machinery; design of gear teeth; link motions, cams, etc. Two hours' recitation and six hours' drawing per week. Tu. W. 3; Tu. F. 5-7.

ASSOCIATE PROFESSOR MITCHELL.

15b. MACHINE DESIGN (4)—A study of empirical methods of design, and the application of the principles of mechanics to the design of machine elements. Recitation Th. F. 3; drawing Tu. F. 5-7.  
ASSOCIATE PROFESSOR MITCHELL.

16. OPERATION OF POWER PLANT EQUIPMENT (2)—The actual operation of steam, gas and oil engines, boilers, pumps, condensers, and the repairing of same. Six hours' work per week are required in this course for two hours' credit. *Elective for M. E. short course students.* M. Tu. 5-7; Sat. 1-3.

MR. CRIPPIN.

17. EXPERIMENTAL ENGINEERING (2)—Calibration of engineering instruments; indicators, steam gauges, planimeters, nozzles, meters, weirs, etc., valve setting, steam engines, gas engines and boiler tests. Text-book: *Moyers' Power Plant Testing*. Four hours' laboratory work per week. M. or Th. 5-7.

ASSOCIATE PROFESSOR MITCHELL.

18. EXPERIMENTAL ENGINEERING (2)—Use of Mahler bomb calorimeter in determining heat value of coal and oil; flue gas analysis; comparative tests of different types of steam engines, boilers, pumps, gas engines, oil engines, turbines; special investigations. F. 5-8.  
PROFESSOR WILSON.

19. **EXPERIMENTAL ENGINEERING (2)**—An advanced course in laboratory investigation for students desiring to take up a definite line of experiments related to some line of study in this department. The experiments and tests will be arranged to suit the needs of small sections.

PROFESSOR WILSON.

20. **STEAM ENGINES AND BOILERS (3)**—Elementary theory of steam and gas engines, boilers; care and management of same; valve gears. *For M. E. short course and B. S. A. students.* M. W. F.

PROFESSOR WILSON.

22a. **THEORETICAL MECHANICS (4)**—Statics and Dynamics. Mathematical discussions of force, inertia, energy, etc. Text-book: *Slocum's Theory and Practice of Mechanics.* M. Tu. W. Th. 2. *Prerequisite:* Mathematics 4a, 4b, and 7.

ASSOCIATE PROFESSOR MITCHELL.

22b. **MECHANICS OF MATERIALS (4)**—The materials of construction, timber, stone, iron, steel, cement, brick, etc., are studied. The formulæ for the figuring of strength of beams, columns, shafting, etc., are developed. Numerous applications of the formula to practical problems are made. Text-book: *Merri-man's Mechanics of Materials.* M. Tu. W. Th. 2. *Prerequisite:* Mathematics 4a, 4b and 7.

ASSOCIATE PROFESSOR MITCHELL.

24a. **STEAM ENGINES AND BOILERS (3)**—Elementary thermodynamics; theoretical heat engines; valve gears; comparison of types of steam engines, boilers, and feed water pumps; use of feed water heater, condensers, etc. M. W. F. 4.

PROFESSOR WILSON.

24b. **GAS ENGINES AND PRODUCERS (3)**—Development and theory of different types of gas and oil engines; suction and pressure producers; cost of gas and steam power compared. Text-book: *Carpenter and Deaderich's Internal Combustion Engines.* M. W. F. 4.

PROFESSOR WILSON.

26. **MACHINE DESIGN (4)**—Theory of steam and gas engines; problems in steam and gas engines and boiler design. Two recitations, six periods of drawing. *Prerequisite:* M. E. 14. Tu. 1 F. 2, M. Th. 5-7.

PROFESSOR MITCHELL.

27b. **HYDRAULICS (2)**—Hydraulics and Hydrostatics. Textbook: Merriman's *Treatise on Hydraulics*. Tu. Th. 4.

PROFESSOR WILSON.

28a. **HYDRAULIC MACHINERY (2)**—A study of the design, construction, and operation of turbines and pumping machinery. Textbook: Merriman's *Treatise on Hydraulics*. Tu. Th. 4.

ASSOCIATE PROFESSOR WILSON.

29. **METHOD OF ICE-MAKING. Cold Storage (2)**—Theory of the absorption and compression systems of ice making; ice-making machinery; cost of making; buildings; insulation of storage rooms.

PROFESSOR WILSON.

30. **HEATING AND VENTILATION (3)**—The theory of heating and ventilation systems, including the flow of air and products of combustion in pipes and chimneys. The sources of the impurities in the air are theretically gone into. The requirements of good ventilation are considered, and the movement of air for ventilating purposes by fans and other means is compared.

The different systems of heating by furnaces, steam and hot water are treated from the text, working drawings being made by the students of each system of heating, and the merits of each are fully treated. Contracts, specifications, bills of material and cost of the different plants are prepared. Two recitations and three hours' drawing per week. Tu. Th. 3, 5, 6, 7.

PROFESSOR WILSON.

31. **STEAMBOILER ENGINEERING (3)**—Mechanical engineering of power plants; location of machinery for equipment of power stations, costs and construction. Two recitations and three hours' drawing per week, either one or two semesters. W. F. 1, M. or Tu. 5, 6, 7. *Prerequisite:* M. E. 24a.

32. **ANALYSIS OF POWER PLANTS (3)**—The factors controlling costs, efficiency, ratings, depreciation of machinery and equipment, expenses and valuations, cost keeping, time systems. Tu. Th. 4, W. 6.

PROFESSOR WILSON.

33. **INSTRUMENTAL SCIENCE**—The student branch of the American Society of Mechanical Engineers holds regular meetings. One credit will be given juniors and seniors for regular attend-

ance and the presentation of at least two papers per year, on some engineering subject.

One-half credit will be allowed freshmen and sophomores for regular attendance, and the reading of assigned papers.

## MINING ENGINEERING

PROFESSOR DRAKE.

The four years course in engineering leading to the degree of B. Mi. E. is outlined on page 102. The course is planned so as to give the major instruction in geology and mining with minor work in chemistry, civil engineering, mechanical engineering and electrical engineering, and at least a working knowledge of some one modern language besides English.

The practical work of mining, metallurgy, and ore dressing can be learned so much more readily at practical work than no laboratory work in these lines is offered at the University. Students are expected, however, to spend parts of at least two summer vacations at ordinary day work in some mine, mill, or smelter where they will be expected to ask questions of the workmen, keep notes of their observations, and compute the costs of some detailed operations.

While the course is not especially exacting, it is severe and should be undertaken only by students well prepared mentally and physically. To accomplish all the work well, the average student will have to devote seven or eight hours per day, six days per week, to his college work during the academic year.

### MINING.

1b. DETAILS OF MINING OPERATIONS (3)—Lectures and recitations three hours per week during the second term on excavation of earth, drilling and blasting; driving shafts, adits, and drifts; stoping, timbering, hoisting, drainage, and transportation.

2a. ORE DRESSING (3)—General principles and theory of ore dressing, cleansing, crushing, sizing, and classifying, jigging, table concentration, stamp milling of gold and silver ores, and descriptions of typical ore dressing works. Text-book: Richard's *Ore Dressing*.

## METALLURGY

1a. GENERAL METALLURGY (2)—Elementary study of fuels and furnaces and the metallurgy of iron and steel, copper, lead, silver, and gold. Lectures and recitations.

2b. ASSAYING (1)—Fire Assaying of various classes of ores and furnace products of gold, silver, and lead. Laboratory work four hours per week on Saturdays with occasional lectures and recitations. Text-book: Fulton's *Manual of Fire Assaying*.

The courses in mining and metallurgy will be extended when there is an increased demand for such courses and when additional teaching force is added to the department.

ENGLISH, MODERN LANGUAGES, MATHEMATICS,  
PHYSICS, CHEMISTRY, GEOLOGY, ECONOMICS

For descriptions of the courses in English, Modern Languages, Mathematics, Physics, Chemistry, Geology, Economics, see the announcements of the College of Arts and Sciences.

# THE COLLEGE OF AGRICULTURE

## FACULTY

- JOHN CLINTON FUTRALL, M. A., *President of the University.*  
MARTIN NELSON, M. S., *Dean of the College of Agriculture*  
ROBERT ROBSON DINWIDDIE, V. S., M. D., *Professor of Bacteriology and Pathology*  
JOSEPH LEE HEWITT, B. S. A., *Professor of Plant Pathology*  
RAYMOND CHARLES THOMPSON, B. S., *Professor of Agricultural Chemistry*  
WILLIAM LUCIUS FOWLER, B. S. A., *Professor of Animal Husbandry*  
WILLIAM HALE WICKS, M. S. A., *Professor of Horticulture*  
CHARLES GEIGER CARROLL, Ph. D., *Professor of Chemistry*  
EDGAR FINLEY SHANNON, Ph. D., *Professor of English*  
BIRTON NEILL WILSON, M. E., *Professor of Mechanical Engineering*  
GEORGE GROVER BECKER, B. S. A., *Assistant Professor of Entomology*  
ROWLAND M. GOW, D. V. M., *Assistant Professor of Veterinary Science*  
WALTER ROY WHEELOCK, B. S. A., *Assistant Professor in Extension Service*  
CHARLES VLADIS RUZEK, B. S. A., *Assistant Professor of Agronomy*  
WILLIAM CASPER LASSETTER, B. S. A., *Assistant Professor of Agronomy*  
SARAH PETTIT, B. S., *Instructor in Home Economics*  
JOHN MALLOY BORDERS, B. S. A., *Instructor in Extension Service*  
JUSTIN RANDOLPH TUCKER, B. S. A., *Instructor in Agricultural Chemistry*  
HARTLEY EUGENE TRUAX, B. S., *Instructor in Horticulture*  
LYNN WESLEY OSBORN, B. S. A., *Instructor in Agronomy*  
WALTER SAMUEL FIELDS, B. S., *Instructor in Plant Pathology*  
CLIFFORD LESLIE MCARTHUR, B. S. A., *Instructor in Bacteriology and Pathology*



DE HELLIK BRANSON, B. S. A., *Instructor in Animal Husbandry*  
 MRS. RAYMOND CHARLES THOMPSON, B. S., *Assistant in Home Economics*

WILLIAM L. NETTLESHIP, *Assistant in Dairying*  
 WILLIAM A. DENMAN, *Agent in Tick Eradication*

The College of Agriculture is designed to train men and women for efficiency in Agriculture. The courses are outlined to offer training for the profession of farming, for teaching agriculture, or for specialization in particular lines in preparation for work in State Experiment Stations or the United States Department of Agriculture.

## ADMISSION

The admission requirements for the college are given in the general statement of the entrance requirements of the University. page 20.

## THE LONG COURSE IN AGRICULTURE

### REQUIREMENTS FOR GRADUATION

The collegiate course of four years leads to the degree of Bachelor of Science in Agriculture. Sixty-seven hours, including military training, are required for graduation. The work of the first two years is prescribed. This is also true in parts of the work of the junior and senior years.

Not later than the beginning of the junior year the student is required to choose his major study, which largely determines the remainder of his work. The outline of the curriculum, page 127, indicates the range of work permitted.

The student must present a minimum of ten hours credit in the major subject and six hours in a minor subject which must be allied to his major.

The major and minor subjects must be taken in the departments of the College of Agriculture. Students preparing to teach agriculture will be allowed to take their major or their minor in the Department of Education.

Students preparing for professional and graduate work must present six hours credit in one modern language.

A thesis is required of all candidates for a degree.

## SPECIAL STUDENTS

Persons over eighteen years of age may, upon approval of the Dean, be admitted as special students. They will be subject to the same regulations as students who present regular entrance requirements. They may become candidates for graduation by providing entrance credits.

## UNCLASSIFIED WORK

Permission to elect special practical work by students who can attend college for one or two years only, will be granted, at the discretion of the Dean, to students who can supply satisfactory evidence that they have had two or more years of practical farm experience. This privilege will not be granted a second time to a student who has not passed satisfactorily all of the work for which he has enrolled in the University.

## THE SHORT COURSE IN AGRICULTURE

Students, sixteen years of age or over, with common school training may enter for the short course in agriculture. This course is designed for those who cannot remain away from home the whole year and who desire training in preparation for practical farming. For description see page 144.

The course begins November 10 and continues for three months. Courses for students taking second year's work will be offered in November, 1915. Similar standards will be required in these courses as in others. For description of courses see page 144.

Correspondence courses offered by the College are described in detail under the head of extension, page 142.

## REQUIRED OF ALL CANDIDATES FOR THE B. S. A. DEGREE

## FRESHMAN YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
English 1, Rhetoric and Composition .....	3	English 1, Rhetoric and Composition .....	3
Chemistry 1, Inorganic Chemistry .....	3	Chemistry 1, Inorganic Chemistry .....	3
Biology 2, Botany .....	3	Biology 2, Botany .....	3
Agronomy 1a, Agronomy.....	3	Agronomy 1b, Agronomy .....	3
Animal Husbandry 1a, Live Stock Judging .....	3	Horticulture 1b, Propagation of Plants and Principles of Plant Culture .....	3
M. E. 11, Drawing .....	2	Chemistry 5, Qualitative Analysis .....	2
Military Science .....	1	Military Science .....	1

## SOPHOMORE YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
Chemistry 6, Qualitative Analysis .....	3	Chemistry 3, Elementary Organic Chemistry .....	3
Agronomy 2a, Soil Physics.....	5	Animal Husbandry 2b, Dairying .....	4
Mathematics 8a, Algebra and Plane Trigonometry .....	4	Physics 5b, Elementary Physics .....	5
Bacteriology 1, Bacteriology.....	3	Bacteriology 1, Bacteriology.....	3
M. E. 14, Shop Work, Carpentry .....	2	C. E. 9b, Surveying .....	1
Military Science .....	1	Military Science .....	1

## JUNIOR YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
Agricultural Chemistry 1a, Agricultural Chemistry .....	3	Entomology 1b, General Entomology .....	3
English 13, English Composition .....	3	English 13, English Composition .....	3
Military Science .....	1	Military Science .....	1

## SENIOR YEAR

First Semester		Second Semester	
	Hours Per Week		Hours Per Week
Industrial History .....	3	Economics .....	3

One of the following groups is to be selected at the beginning of the junior year.

*Required of Students Majoring in Agronomy*

	Credit Hours
Plant Pathology 3a, Plant Diseases.....	2
Animal Husbandry 3b, Feeds and Feeding .....	1½
Agronomy 4a, 4b, Farm Crops .....	5
To be selected under the direction of the major professor .....	10
Electives .....	3

*Required of Students Majoring in Animal Husbandry*

	Hours per week	Credit Hours
Veterinary Science 1a.....		3
Agronomy 5b, 5l, Soil Fertility .....		2½
Animal Husbandry 3b, Feeds and Feeding .....		1½
Animal Husbandry 4b, Live Stock Breeding.....		1½
To be selected under the direction of the major professor .....		10
Electives .....		3

*Required of Students Majoring in Horticulture*

	Credit Hours
Plant Pathology 3a, Plant Diseases.....	2
Agronomy 5b, 5l, Soil Fertility .....	2½
Horticulture 6, Seminar .....	1
To be selected under the direction of the major professor .....	12
Electives .....	3

*Required of Students Preparing to Teach Agriculture*

	Credit Hours
Education .....	9½
Geology or Biology .....	3
Animal Husbandry 3b, Feeds and Feeding.....	1½
Horticulture 5b, Vegetable Gardening.....	1
Animal Husbandry, 1a, Stock Judging.....	1
Plant Pathology 3a, Plant Diseases or Agronomy 4a, Farm Crops .....	2-2½
Elective in Horticulture .....	1½
Elective .....	3½

*Required of Students Looking to Professional and Graduate Work*

	Credit Hours
Modern Language.....	6
Major subject .....	6
Minor .....	4½
Agricultural Chemistry 2.....	2
Thesis (in the major subject) .....	1½
Elective .....	1½

## LABORATORIES AND EQUIPMENT

*Agricultural Chemistry Laboratory.* The laboratory of agricultural chemistry is located in three rooms in the Experiment Station Building. It is equipped with water, gas, tables, hoods, and all apparatus necessary for analytical work relative to various agricultural problems.

*Cotton Laboratory.* The cotton laboratory is located in the Agricultural building. It is equipped for technical study of cotton and cotton fiber in addition to the more practical study. A new improved gin, a common gin, a fiber-strength testing machine, a lantern for the study of length and character of fiber, a microscope, and hundreds of samples of cotton, representing all types and grades are available for instruction and research.

*Entomological Laboratory.* The entomological laboratory is located on the first floor of Agricultural Hall, occupying two rooms. It is well supplied with apparatus such as microscopes, microtomes, paraffine baths, dissecting instruments, collecting nets, insect cabinets, and work-tables. The collection of insects is growing rapidly and serves as a valuable aid to the student of entomology.

*Field Crops Laboratory.* The laboratory of field crops is located on the second floor of the Agricultural Building. A complete set of material is used in the study of types, strains and quality, and the scoring and judging of staple and miscellaneous crops.

*Horticultural Laboratory.* For such work as must be carried on indoors there is available for study and practice a fairly complete equipment of spraying machinery, garden tools, implements and conveniences. There are rooms equipped for practical instruction in grafting, seed sowing, seed testing, and transplanting. The greenhouse offers facilities for some phases of class work, plant study and practice. By using the orchard, garden, greenhouse, and campus as a laboratory, the student has opportunity to combine theory and technique in the most beneficial manner.

*Plant Pathology Laboratory.* The laboratory of plant pathology is located in the Experiment Station Building. It is

equipped with high power microscopes and such apparatus as is needed for the study of plant tissues and plant diseases.

*Soils Laboratory.* The soils laboratory is located on the first floor of the Agricultural Building. It is equipped with apparatus for special study of soils with the view of giving the student an insight into the formation, composition, and character of soils with reference to their bearing upon soil fertility, adaptability, and all methods of soil treatment affecting the productivity and conservation of soils.

*Bacteriology Laboratory.* The research laboratory of the department is located in the Experiment Station Building, where a part of the instruction in bacteriology is given. A well equipped laboratory in the Dairy Building is used for the major part of the student work.

*Dairy Laboratories.* The Dairy Building is equipped with a full line of modern dairy machinery. A modern creamery is operated throughout the year. Student laboratories are equipped for the study of sanitary principles in dairying and with separators, churns, vats, and equipment for standard home dairying.

*Animal Husbandry.* Modern barns, including dairy barn, horse barn, hog barn and poultry houses, are easily accessible for use in instruction. The livestock: horses, cattle, swine and poultry, form the basis for instruction in animal industry.

*Home Economics Laboratories.* Half a floor in Peabody Hall is occupied by the laboratories for cookery, sewing, millinery, and table service, and a reception room. The equipment in each laboratory is new and modern, chosen for its utility and convenience. It is sufficient to carry on successfully the work of the classes in the various branches of Home Economics.



# DESCRIPTION OF COURSES OFFERED IN THE COLLEGE OF AGRICULTURE

Courses designated by a number followed by the letter *a* are given during the first semester.

Courses designated by a number followed by the letter *b* are given during the second semester.

Courses designated by a number alone are continued through both semesters.

The number in parentheses after the name of a course indicates the number of hours of credit given for completion of the course.

It is provided that any course not prescribed for graduation may be withdrawn unless four or more students enroll for it.

## BACTERIOLOGY AND PATHOLOGY

PROFESSOR DINWIDDIE, MR. McARTHUR.

1. BACTERIOLOGY (3)—Lectures and laboratory work. An elementary course in general bacteriology, designed as a general course for those who intend to study more in detail the application of bacteriology to the various branches of agriculture—soils, dairying, plant and animal diseases. The lectures are descriptive of the morphology and functional activity of bacterial organisms as saprophytes and as producers of disease.

In the laboratory practical exercises are given in the technique of bacteriologic study and investigation. *Required of sophomores.*

2b. RURAL HYGIENE (2)—A course of lectures on modern principles of sanitation in reference to the farm, home and rural communities. It includes the location and care of wells, barns, dwellings and out-houses, and the modern methods for the sanitary disposal of waste, all with reference especially to the well known insanitary conditions prevailing in rural communities in the South.

## HORTICULTURE

PROFESSOR WICKS, MR. TRUAX.

Horticulture consists of four distinct lines of work, namely: Pomology, Vegetable Gardening, Floriculture, and Landscape Gardening.

Horticulture 1b is required of all students in the freshman year in the College of Agriculture. Students specializing in agricultural education are required to take three additional hours in horticulture. For students majoring in horticulture see outline of the curriculum. It is advisable for the student majoring in this work to specialize in some particular branch of horticulture.

Special students cannot take advanced work until the necessary prerequisite courses are completed.

1b. PROPAGATION OF PLANTS AND PRINCIPLES OF PLANT CULTURE (3)—This course deals with the methods used in greenhouse and nursery in the multiplication of plants. Also, the student is expected to become familiar with the common practices and problems of the orchard and garden. Two lectures and one laboratory. Required of freshmen.

2. PRACTICAL POMOLOGY (3)—A study of the general and fundamental principles of fruit growing. The student is expected to become skillful in planting, pruning, thinning, harvesting, and packing. Practical problems in handling commercial orchards are included. Two lectures and one laboratory.

3a. SMALL FRUIT CULTURE (2)—A study of the small fruits such as the strawberry, blackberry, raspberry, currant, gooseberry, and dewberry. Each is studied in reference to the following points: history, classification, propagation, planting, pruning, enemies, harvesting and marketing. Lectures and recitations.

4a. SYSTEMATIC POMOLOGY (2)—The description, nomenclature and classification of our common fruits are studied. Practice is given in fruit judging and displaying. Varieties of fruit from many different states are obtained for comparison. **Mainly reference and laboratory work.**

5b. VEGETABLE GARDENING (2)—This course consists of work in classification, culture, handling, and marketing vegetables. Considered both from a home and market garden standpoint. **One lecture and one laboratory.**

6. SEMINAR (1)—One lecture per week of technical work for advanced students dealing with special problems and adapted to the needs of the student. Required of students majoring in Horticulture.

7a. COMMERCIAL POMOLOGY (2)—A course dealing with problems of packing, marketing, transportation, storage, formation of fruit growers' associations, and handling by-products. Lectures, laboratory, recitation, and reference reading.

8b. LANDSCAPE GARDENING (2)—A study of the elementary principles with reference to the selection and arrangement of trees and plants for beautifying private and public grounds. One lecture and one laboratory.

9. THESES (2)—Required of senior horticultural students.

## AGRONOMY

PROFESSOR NELSON ASSISTANT PROFESSOR RUZEK, ASSISTANT  
PROFESSOR LASSETTER, MR. OSBORN.

Agronomy is the science of the field, the soil and its crops. The study of the soil is conducted from the standpoint of the fundamental principles of management of the soil for crop production and for affording opportunity for special study in particular fields of the subject. The study presupposes a fair understanding of the general principles of physics, chemistry, and plant physiology.

The study of crops is conducted from the standpoint of the fundamental botanical and physiological principles underlying the growth, adaptation, and improvement of plants, and economic and business management of the field and its crop. The study presupposes a general knowledge of botany.

1. AGRONOMY (3)—The course comprises a study of crops—corn and small grains, cotton and other fibre crops, grasses, clovers, forage and miscellaneous crops. It consists of a study of types, varieties, strains, quality, market standards, the use of score cards, grading, identification of seeds of grasses, clovers, alfalfa, and other legumes and forage crops, weed seed and characteristic adulterants, noxious and parasitic seeds. Stress is placed upon the staple crops. Lecture and laboratory work combined. M. W. F. 3, 4. *Required of freshmen.*

2a. SOIL PHYSICS (3)—This course comprises a study of

the nature, origin, formation, and classification of soils; soil moisture and the methods of conserving it; movements of soil water; its relation to color, light, and temperature; objects and method of use of farm implements as related to the various soils and crops; cultivation and drainage as affecting soil moisture, temperature, aeration, root development, and the supply of available plant food. Three lecture periods. M. W. F. 1. *Required of sophomores.*

2l. SOIL PHYSICS (3)—A laboratory course. Supplementary to course 2a. Designed to prepare the student better to understand the nature of soil, the methods of treatment of soil and the effect of these methods upon aeration, texture, temperature, moisture, water holding capacity, and crop production. The work comprises the determination of such constants as specific gravity, pore space, capillarity, organic matter, etc., of the various types of soils; mechanical analysis of soils; soil survey and soil mapping. Two three-hour periods. M. F. 5, 6, 7. *Required of sophomores.*

4. FARM CROPS (5)—This course embraces a thorough study of staple and miscellaneous farm crops; methods of cultivation, seeding, harvesting, storing, and marketing; testing, selecting, and improvement; combating weeds. M. T. W. Th. F. 2. *Required of students majoring in agronomy.*

5b. SOIL FERTILITY (3)—A study of conditions governing productivity, exhaustion of soils, and maintenance of fertility; soil bacteria, organic matter, green manures, farm manures, and commercial fertilizers; effect of crops and fertilization; rotation of crops and treatment of soil; soil building; a permanent agriculture. M. W. F. 1.

5l. SOIL FERTILITY (2)—A laboratory course in soil chemistry. Supplementary to 5b. Two periods. T. Th. 5, 6, 7.

6b. FARM DRAINAGE (3)—This course comprises the study of drainage and irrigation relative to the farm; the mapping, planning, and laying of drainage systems and rice farms; field work, including the care, adjustment, and use of instruments used in this work. Recitation and laboratory work three periods per week. *Prerequisite: Agronomy 2a.*

7. SPECIAL JUDGING (2)—Advanced judging of cotton, corn, rice, and grains. Lectures, laboratory exercises, and assigned

reading. *For advanced students and graduates. Prerequisites: Agronomy 1, 2a, 2l, 4.*

8a. GENETICS (3)—The fundamental principles of variation and heredity. Designed to give a thorough knowledge of the basic principles involved in the systematic improvement of plants and animals. The course is preparatory to courses in practical plant and animal breeding.

8b. PLANT BREEDING (3)—The practical application of the principles of variation and heredity to the breeding of general farm crops. Special attention is paid to the practical breeding of corn, cotton, grains, and forage crops. Lectures and assigned readings. *For advanced students and graduates. Prerequisite: Agronomy 8a.*

9a. FARM MANAGEMENT (3)—Choosing and buying the farm. Systems of farming intensive and extensive, specialized and general; arrangement, organization, and equipment for special systems; administration and cost or production; marketing farm products; records, accounts. *For advanced students and graduates.*

10. RESEARCH WORK—Individual effort combined with class work. One or both semesters. *For advanced students and graduates.*

11. THESIS—Special investigation of subjects in the field of agronomy. *Required of students majoring in agronomy. Hours to be arranged.*

## PLANT PATHOLOGY

PROFESSOR HEWITT, MR. FIELDS.

Plant Pathology 1a, 2b, 3a, 3b, 4b, treat the subject of plant diseases primarily from the standpoint of agriculture. The work in morphology and histology is such as will lead to a thorough understanding of the economic aspects of the subject.

1a. MYCOLOGY (4)—Morphology of typical fungus forms and the classification of fungi, including a brief consideration of the allied groups of lower plants.

2b. PLANT PATHOLOGY (4)—Disease of plants in relation to parasites and environment. The conditions inducing disease and the reaction of the diseased organism. Three hours per week are spent in the class room and the equivalent of one hour per

week is spent in summer field work. *Prerequisite:* Plant Pathology 1a.

3a. DISEASES OF PLANTS (3)—The more important fungous and bacterial diseases of crop plants, their characteristics and control. *Required of students majoring in horticulture and in agronomy.* *Prerequisite:* Biology 2.

3b. DISEASES OF TREES (3)—The diseases of economically important forest trees, the causes of decay in timber. *Prerequisite:* Plant Pathology 1a or 3a.

4b. BACTERIA IN RELATION TO PLANT DISEASE (3)—Cultural and morphological studies of bacteria causing plant disease. Infection experiments. *Prerequisite:* Plant Pathology 1a or 3a.

5. RESEARCH WORK—Will be assigned to students with adequate preparation. Hours to be arranged. Not less than three credit hours.

## VETERINARY SCIENCE

ASSISTANT PROFESSOR GOW.

1a. VETERINARY SCIENCE (3)—This course comprises a general outline of veterinary anatomy and physiology, diseases of animals, their treatment, and simple surgery. Two lectures, one laboratory period on Saturday, clinics from 8 to 12 o'clock. *Required of students majoring in animal husbandry.*

1b. VETERINARY SCIENCE (3)—This course consists of the anatomy and physiology of domestic animals; dentition and the determination of age by teeth; lameness—its cause, prevention and cure; ventilation and disinfection; contagious diseases and diseased processes; methods of restraint and anesthetics, surgery. *Required of students majoring in animal husbandry.*

## AGRICULTURAL CHEMISTRY

PROFESSOR THOMPSON, MR. TUCKER.

Agricultural Chemistry deals mainly with the changes occurring in the soil, the growth and life of plants, the feeding of animals, and the preparation of food products. It is essentially the application of chemistry to agricultural problems.

In the following courses it is assumed that the student possesses an acquaintance with general chemistry and is familiar



with the properties of the more commonly occurring elements and their compounds.

1a. AGRICULTURAL CHEMISTRY (3)—A detailed study of the application of chemistry to agricultural problems, with special reference to the income and outgo of the elements that determine success or failure in crop production, and hence the agricultural prosperity of a country. *Prerequisite:* Chemistry 1, 3, and 5. *Required of juniors.*

2. AGRICULTURAL CHEMISTRY—This course will consist largely of the chemical analysis of fertilizers, insecticides and fungicides, dairy products, concentrated feeds and feeding stuffs, and soils. The laboratory work will be supplemented by lectures. Amount of credit to be determined by the work done. Hours to be arranged. *Prerequisite:* Chemistry 1, 5, and 6, and Agricultural Chemistry 1a.

## ENTOMOLOGY

ASSISTANT PROFESSOR BECKER.

The courses of this department, as outlined below, are designed to meet the needs of two classes of students; namely, students of agriculture who desire to get an insight into the subject from an economic standpoint, and students who wish to make a more thorough study of the subject with a view towards specialization in the field of entomology.

1a. GENERAL ENTOMOLOGY (3)—Lectures and laboratory work in the morphology, habits and classification of insects. Two hours of lectures and three hours laboratory work per week.

2b. ECONOMIC ENTOMOLOGY (3)—Two hours of lectures and three hours laboratory work per week. In the lectures the various economic insects and critical phases of their life histories, methods of control, insecticides, spray machinery, etc., are discussed. Laboratory work is given over to the compounding of insecticides, studying different spray machinery, and to field study of the habits of some of the economically important insects. *Prerequisite:* Entomology 1a.

3a. MORPHOLOGY OF INSECTS (3)—This course takes up in more detail the laboratory work in Entomology 1a and is designed for students who wish to do more advanced work in entomology. Must be preceded or accompanied by Entomology 1a.

The student may take this course in lieu of the laboratory course in Entomology 1a. Hours by appointment.

4a or 4b. ELEMENTARY SYSTEMATIC ENTOMOLOGY (3)—Laboratory study of wing venation of insects and of the grosser distinguishing characteristics used in classifying insects. *Prerequisite*: Entomology 1a or 2b. Hours by appointment.

5a or 5b. ADVANCED SYSTEMATIC ENTOMOLOGY—Laboratory work in classification. A study of some of the finer distinguishing characteristics of insects. *Prerequisite*: Entomology 1a, 2b, and 3a. Hours by appointment.

6b. HISTOLOGY OF INSECTS (3)—Laboratory study of the cell structure of insects. *Prerequisite*: Entomology 1a and 2b. Hours by appointment.

7. RESEARCH WORK—Will be assigned to students having adequate preparation. Two or more credit hours. Hours by appointment.

## ANIMAL HUSBANDRY

PROFESSOR FOWLER, MR. BRANSON, MR. NETTLESHIP.

This department offers courses in live stock production, dairying, and poultry. Training is given in all lines of work which pertain to the judging, selecting, breeding, feeding, development, care and management of the various breeds and classes of domesticated animals. The stock and poultry owned by the department are used to familiarize the student with the various types and breeds of livestock and their management. Students interested in dairy manufactures have the opportunity to study the machinery in operation in the creamery.

1a. LIVESTOCK JUDGING (3)—Includes the judging of different classes of horses, cattle, sheep and swine. The first part of the work consists of the use of the score card as applied to the different types and breeds. The latter part consists of practice in comparative judging of animals from the college herds, supplemented by livestock belonging to neighboring farmers and livestock men. *Required of freshmen*. Text: *Craig's Judging of Livestock*.

PROFESSOR FOWLER.  
MR. BRANSON.

1b. **LIVESTOCK JUDGING (3)**—A continuation of 1a. In addition, special emphasis is placed on comparative rating, breed characteristics, and soundness of animals. *Prerequisite:* Animal Husbandry 1a.

PROFESSOR FOWLER.

2a. **POULTRY HUSBANDRY (3)**—The general care and management of poultry, production of poultry for the market, diseases and pests, feeding, breed characteristics. Recitations, lectures and laboratory work including inspection of poultry farms. Text: *Lewis' Productive Poultry Husbandry*.

PROFESSOR FOWLER.

2b. **ELEMENTS OF DAIRYING (4)**—The lectures and recitations include a study of the secretion and composition of milk and the causes of variation in composition; the Babcock test as applied to milk and cream; the various methods of cream raising, including a study of the construction and operation of centrifugal separators; methods of making and marketing ice cream, cheese, and butter; proper handling of the milk on the farm, etc. The laboratory work includes testing milk and other dairy products, operation of different makes of cream separators, making butter, cheese, and ice cream. *Required of sophomores*.

MR. NETTLESHIP.

3a. **HISTORY OF BREEDS (3)**—The characteristics of each breed of horses, cattle, sheep, swine, goats, and jacks are considered at length. Each breed is discussed with reference to its origin, history, development, and adaptation to American conditions. Text: *Plumb's Types and Breeds of Livestock*.

MR. BRANSON.

3b. **FEEDS AND FEEDING (3)**—The principles of animal nutrition: composition and digestibility of various feeds; construction and use of silos; balanced rations; economical feeding of animals for various purposes. *Required of students majoring in Agronomy and Horticulture*. Text: *Henry's Feeds and Feeding*. *Prerequisites:* Chemistry 1, 3, and 6, or the equivalent.

MR. BRANSON.

4a. **BEEF, MUTTON, AND WOOL PRODUCTION (3)**—The practical application of the study of leading breeds of cattle and sheep and the most approved methods of management for the economical

production of beef, mutton and wool. *Prerequisites:* Animal Husbandry 1a and 3a. MR. BRANSON.

4b. LIVESTOCK BREEDING (3)—The application of the principles of Genetics to practical animal breeding. For advanced students. *Prerequisite:* Genetics (Agronomy 8a).

PROFESSOR FOWLER.

5a. PORK PRODUCTION (2)—An advanced study of the types and breeds of swine, the most economical methods of growing and finishing market hogs, the selection, care, and management of the breeding stock, methods of housing, yarding, and pasturing swine. Text: *Day's Productive Swine Husbandry*. *Prerequisites:* Animal Husbandry 1a and 3a.

MR. BRANSON.

5b. MILK PRODUCTION—A study of the dairy herd and the production of milk from the standpoint of the farmer and the special dairyman, the leading breeds of dairy cattle, their special characteristics and adaptations to dairy purposes; the selection, breeding, and building up of a dairy herd, feeding for milk production, etc. Text: *Eckles' Dairy Cattle and Milk Production*. *Prerequisites:* Animal Husbandry 1a, 3a, and 2b.

PROFESSOR FOWLER.

6a. BUTTER MAKING—DAIRY MECHANICS—The composition of milk and butter, separation of milk by gravity and centrifugal force, pasteurization, the use of different kinds of pure culture, cream ripening, churning, working, printing, packing, and marketing butter. Shop practice with engines, boilers, artificial refrigeration machinery, creamery machinery, pipe fitting, belt lacing, etc. *Prerequisites:* Animal Husbandry 2b. Elective.

MR. NETTLESHIP.

6b. DAIRY BACTERIOLOGY (3)—A course in the application of the principles of bacteriology to the various phases of dairying.

PROFESSOR FOWLER.

MR. NETTLESHIP.

7a. HORSE PRODUCTION (2)—Feeding, care, and management including a study of the most economical feeds for maintenance, light, medium and heavy work; pasture crops, etc. Feed for stal-

lions, brood mares, and colts. Breeding and training of young horses. Text: *Gay's Profitable Horse Husbandry*. *Prerequisites*: Animal Husbandry 1a and 3a. MR. BRANSON.

7b. LIVESTOCK FARM MANAGEMENT (2)—A course dealing with the purchase, organization, equipment, and management of different kinds of livestock farms with reference to financial returns; buying, selling, and marketing of livestock; crops for pasture. For senior students. *Prerequisites*: Animal Husbandry 1, 2b, 3, 4, 5, and 7a. PROFESSOR FOWLER.

8a. ADVANCED LIVESTOCK JUDGING (3)—Show yard judging; classification for different rings, methods of comparative judging. Trips made to large herds in different sections of the country, and students required to spend several days attending county and state fairs judging livestock. Required of students who are candidates for the judging team. *Prerequisites*: Animal Husbandry 1a, 1b, and 3b. PROFESSOR FOWLER.

8b. EGG PRODUCTION (3)—An advanced treatment of factors influencing egg production, economic conditions giving rise to the demand for eggs, market classification of eggs and markets. Special topics on related subjects will be assigned. Hours to be arranged. *Prerequisites*: Animal Husbandry 2a and 3b. PROFESSOR FOWLER.

9. THESIS WORK (2)—The work will consist of a written treatment of a subject assigned by an instructor in charge. *Required of all students majoring in Animal Husbandry*.

## EXTENSION SERVICE

ASSISTANT PROFESSOR WHIFFLOCK, MR. BORDERS.

The Extension Service of the College of Agriculture and Experiment Station was established for the purpose of bringing the work of the two institutions into closer touch with the rural communities of the state. This service is designed to give the farmer the benefit of the assistance of the College and Experiment Station.

The Extension Service organizes farm schools to be conducted in the various counties by men from the College Faculty and

Experiment Station staff, in cooperation with the U. S. Farm Demonstration forces and other agricultural agencies of the state; provides lectures and demonstrations at teachers' institutes, public school gatherings, and farmers' clubs; meets demands for exhibits, demonstrations, lectures, and judging at fairs; supplies agricultural news and information to the press of the state; and conducts correspondence courses covering all phases of agriculture. The time of the men engaged in this service is given free of charge. The only cost to the local community for schools, lectures, demonstrations, etc., is the advertising and printing, hall rental, and the necessary expenses of the men incident to their trip to and from the locality. Correspondence concerning these or other branches of the Extension Service should be addressed to the Office of Extension Service, Fayetteville.

#### CORRESPONDENCE COURSES

The correspondence courses are adapted to the needs of persons who wish to acquire further information on agricultural subjects but cannot come to the college for study. For best results the student should have a good common school education.

The only expense to the student is the cost of the prescribed texts and manuals and the postage on matter mailed to the Department. A bulletin containing full information will be mailed to any resident of the state upon application.

#### CORRESPONDENCE COURSES

COURSE I—Soils and Fertilizers. Price of texts, \$2.60.

COURSE II—Farm Crops. Price of texts \$1.75.

COURSE III—Feeds and Feeding. Price of texts \$1.50.

COURSE IV—Dairy Cattle and Dairying. Price of texts, \$1.35.

COURSE V—Beef Cattle and Swine. Price of texts \$2.00.

COURSE VI—Horses, Mules and Sheep. Price of texts \$3.15.

COURSE VII—Livestock Breeding. Price of texts \$1.50.

COURSE VIII—Poultry Culture. Price of texts \$2.00.

COURSE IX—Livestock Diseases and Veterinary Practice.

Price of texts \$1.50.

COURSE X—Farm Systems and Business Management. Price of texts \$1.75.



COURSE XI—Horticulture (fruits). Price of texts \$1.50.

COURSE XII—Trucking and Market Gardening. Price of texts \$2.00.

COURSE XIII—Principles of Canning and Preserving. Price of texts \$1.65.

COURSE XIV—Landscape Gardening for Home and School. Price of texts \$2.00.

COURSE XV—Home and School Sanitation. Price of texts \$1.50.

COURSE XVI—Elementary Agriculture for Rural Teachers. Price of texts \$1.50.

#### COLLEGIATE COURSES

I. PUBLIC SCHOOL AGRICULTURE (3)—A course in general agriculture designed to prepare students to teach the subject in the public schools of the state. The course includes both lectures and laboratory work. M. or W. 6. Laboratory Tu. and Th. 6-7, or W. and F. 3-4. *Required of all Normal students.*

#### ENGLISH, MATHEMATICS, CHEMISTRY, PHYSICS, MODERN LANGUAGES, HISTORY, ECONOMICS, BOTANY

For description of courses in English, Mathematics, Chemistry, Physics, Modern Languages, History, Economics, and Botany see the announcements for the College of Arts and Sciences.

#### DRAWING, SHOP WORK, SURVEYING

For descriptions of the courses in Drawing, Shop Work, and Surveying see the announcements of the College of Engineering.

## THE SHORT COURSE IN AGRICULTURE

*Required of all Short Course Students.*

	Hours per week
Agronomy: Soils, fertilizers, tillage.....	3
Agronomy: Field crops, cultural methods, corn and grain judging .....	6
Animal Husbandry: Live stock judging.....	4
Animal Husbandry: Feeding and live stock management .....	2
Veterinary Science: Common diseases of live stock and methods of treatment .....	5
Bacteriology and Pathology: Farm sanitation.....	1
Horticulture: Plant propagation and orchard practice .....	4
Mechanical Engineering: Blacksmith shop work, silo construction, concrete mixing .....	6

In addition the student will elect one of the following courses:

	Hours per week
Course I—Agronomy—Cotton: cultural methods. Animal Husbandry: Dairying; the handling of milk and its products.....	6
Course II—Agronomy: Cotton grading and marketing. Entomology: Field crop insects and diseases .....	6
Course III—Animal Husbandry: Poultry and stock breeding. Animal Husbandry: Dairying and handling of milk and its products.....	6
Course IV—Animal Husbandry: Poultry and stock breeding. Entomology and Plant Pathology: Field crop insects and diseases.....	6
Course V—Horticulture: Home and commercial gardening and truck growing .....	6
Course VI—Entomology and Plant Pathology: Orchard insects and diseases and their control...	6

## HOME ECONOMICS

MISS PETTIT, MRS. THOMPSON.

The Department of Home Economics offers a four years course leading to the degree of B. S. in Home Economics, with a major in Domestic Science or Domestic Arts. It also offers a two years course leading to a certificate of Licentiate of Instruction (see School of Education).

Courses are open to all regularly matriculated women students. Entrance requirements are the same as for College of Agriculture, pp. 20-21.

A laboratory fee of five dollars is required for each semester of cookery. Students in the sewing classes are required to furnish all materials used by them.

Electives must be chosen under direction of the major professor.

*Required of all Candidates for the Degree, B. S. in Home Economics*

## FRESHMAN YEAR

	Hours per week
Biology 1, General Biology .....	3
Chemistry 1, Elementary Chemistry .....	4
English 1, Rhetoric and English Composition .....	3
.....	3
Home Economics 20a and 20b, Elementary sewing....	2
Home Economics 3, Survey .....	2

## SOPHOMORE YEAR

	Hours per week
Chemistry .....	2
English 2, History and Development of English Literature in outline .....	3
Modern Language .....	3
Physics .....	4
Home Economics 10a and 10b, Elementary Cooking .....	3
Elective .....	2

## JUNIOR YEAR—MAJORS IN DOMESTIC SCIENCE

	Hours per week
Biology, Physiology .....	3
Home Economics 2, Advanced Cookery..	3
Chemistry .....	2
Elective .....	8

## JUNIOR YEAR—MAJORS IN DOMESTIC ART

	Hours per week
Biology, Physiology .....	3
Home Economics 21, Dressmaking.....	2
Home Economics 34a and 34b, Textiles and Costume and Design .....	3
Elective .....	8

## SENIOR YEAR

	Hours per week
Home Economics, 40a and 40b, Nutrition and Dietetics .....	3
Home Economics, Household Management .....	2
Elective .....	11

## DESCRIPTION OF COURSES IN HOME ECONOMICS

1a. PRESENTATION OF DOMESTIC SCIENCE (2)—This course deals with the methods of teaching Domestic Science in elementary and secondary schools. Industrial and vocational training are discussed.

1b. PRESENTATION OF DOMESTIC ART (2)—The place of Domestic Art in the curriculum and the method of presenting the subject to classes are considered. *Prerequisite or parallel:* Education 1a and 2b, Education 3a and 3b.

2. TEACHING (4)—Students are required to teach Home

Economics six hours per week in the Training School of the University. *Prerequisite:* Home Economics 1.

3. SURVEY (2)—These lectures deal with a study of Home Economics in the relation to education, home, and society.

10a. FOODS (3)—This course includes a study of the classification of food materials, their selection, method of preparation, and cost. *Prerequisite:* Chemistry 1. Laboratory and lectures six hours per week.

10b. HOME COOKERY (3)—The object of this course is to present the problems of the home dietary. Marketing and economy are emphasized. Table appointments and service are considered. *Prerequisite:* Home Economics 10a. Laboratory and lectures six hours per week.

11. FOODS (4)—This course includes the planning of menus, the purchasing of foods, and the preparation and serving of luncheons. *Prerequisites:* Home Economics 10b. Laboratory and lecture six hours per week.

20a. NUTRITION (3)—This is a course of lectures on the fundamental principles of nutrition and the composition of foods with reference to nutrition.

20b. DIETETICS (3)—The principles of nutrition are applied to the diet. Balanced dietaries are planned and prepared with special reference to the family income. *Prerequisites:* Home Economics 10a and 10b, Home Economics 40a.

25b. FOOD PRODUCTION (1)—The more important phases of the process of manufacture and production of commercial foods are studied. Two hours lecture per week.

30a. SEWING (2)—In this course practice in hand sewing is given, plain and ornamental stitches, darning and patching. Care and use of the sewing machine and simple machine problems are considered. Laboratory six hours per week.

30b. SEWING (2)—The drafting of simple patterns and the adaptation and use of commercial patterns are taught. Undergarments including both hand and machine work, and a linen or cotton dress are made. *Prerequisite:* 30a. Six hours laboratory.

31a. DRESSMAKING (2)—Drafting of shirtwaist and dress patterns, and the making of a shirtwaist and silk or woolen

dress are required. *Prerequisite:* Home Economics 30a and 30b. Six hours lecture and laboratory.

32a. MILLINERY (2)—This course includes the construction of wire and buckram hat frames, making of hat trimmings, the use of old materials. Six hours laboratory.

33a. TEXTILES (2)—The source of supply, the structure, manufacture, and relative values of fabrics, and methods of determining their adulteration are presented. Two lectures per week.

34b. COSTUME AND DESIGN (2)—Included in this course are the history and evolution of costume, study of prevailing styles, the hygiene of clothing, and original design of costumes. Three hours lecture and laboratory a week. Not given in 1914-15.

# THE AGRICULTURAL EXPERIMENT STATION

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## STATION STAFF

JOHN CLINTON FUTRALL, *President of the University*  
MARTIN NELSON, *Director*  
ROBERT ROBSON DINWIDDIE, *Bacteriologist and Pathologist*  
JOSEPH LEE HEWITT, *Plant Pathologist*  
RAYMOND CHARLES THOMPSON, *Agricultural Chemist*  
GEORGE GROVER BECKER, *Acting Entomologist*  
ROLAND M. GOW, *Acting Veterinarian*  
WALTER RAY WHELOCK, *Extension Service*  
WILLIAM LUCIUS FOWLER, *Animal Husbandman*  
WILLIAM HALE WICKS, *Horticulturist*  
CHARLES VLADIS RUZEK, *Assistant Agronomist*  
WILLIAM CASPER LASSETTER, *Assistant Agronomist*  
JUSTIN RANDOLPH TUCKER, *Assistant Agricultural Chemist*  
HARTLEY EUGENE TRUAX, *Assistant Horticulturist*  
LYNN WESLEY OSBORN, *Assistant Agronomist*  
WALTER SAMUEL FIELDS, *Assistant Plant Pathologist*  
CLIFFORD LESLIE McARTHUR, *Assistant Bacteriologist*  
DE HELLIK BRANSON, *Assistant Animal Husbandman*  
WILLIAM L. NETTLESHIP, *Assistant Dairyman*  
RUSSELL L. HOOD, *Secretary*

The purpose of the Experiment Station is to determine facts, work out problems and make investigations that have a bearing upon the agriculture of the state and the country in general. The results of investigations are published in bulletin form and distributed free. All information in possession of the various departments of the Institution is available to citizens of the state upon demand. The farmer is in this way relieved of the time, labor and expense involved in working out such facts for himself. He also receives the benefit of facts that only the best trained specialists are capable of determining. Practically all of the agricultural information that we possess and put into practice is based upon experiment station effort.



## DEPARTMENTS OF THE STATION

THE OFFICE OF THE DIRECTOR OF THE EXPERIMENT STATION is in the Agricultural Building.

THE DEPARTMENT OF BACTERIOLOGY AND ANIMAL PATHOLOGY has its office and laboratory in the Experiment Station Building. The department conducts investigation and research relative to the causes and character of animal diseases and means of combating them.

THE DEPARTMENT OF HORTICULTURE has its offices in the Experiment Station Building. It has a greenhouse, in which forcing experiments and other experiments in plant propagation are carried on. The orchards and grounds in charge of this department contain many varieties of apples, pears, plums, cherries, and small fruits, which serve as material for experiments with varieties, methods of culture, pruning and spraying.

THE DEPARTMENT OF AGRONOMY has its office on the second floor of the Agricultural Building. This department carries on investigations with farm crops, testing and breeding new and pure varieties of cotton, corn, grains, grasses for hay, pasture and cover crops, and other agricultural crops. It also carries on experiments in soil fertility and the management of soils for different crops. The work of this department is conducted on the station farm and at the substations. A special feature is the work with cotton and corn at the substations of the southern part of the state.

THE DEPARTMENT OF PLANT PATHOLOGY has its office and laboratory in the Experiment Station Building. This department carries on investigation of plant diseases with reference to their nature, cause of development, and means of combating and eradicating them. The department is equipped with excellent apparatus for its investigations.

THE DEPARTMENT OF VETERINARY SCIENCE is located in the Experiment Station Building. State inspection for contagious diseases of animals and for the eradication of cattle tick is supervised by this department; it investigates the best means of checking and stamping out diseases of animals.

THE DEPARTMENT OF CHEMISTRY is located in the Experiment Station Building. Its laboratories are fitted with improved mod-

ern apparatus. This department carries on investigations along chemical lines.

THE DEPARTMENT OF ENTOMOLOGY has its office and laboratories on the first floor of the Agricultural Building. Investigations are conducted by this department in life histories of insects injurious to agriculture and methods of exterminating such insects. Orchard nursery inspection is a feature of the work.

THE DEPARTMENT OF ANIMAL HUSBANDRY is located in the Dairy Building. This department carries on investigations in feeding, breeding, and care of farm animals, including poultry. Its special feature is a well-selected herd of hogs, representing several breeds, on which various feeding and breeding tests are made. In connection with this department is a model dairy, equipped with improved dairy machinery and well equipped with laboratories. The dairy is conducted on an economic basis.

# THE COLLEGE OF MEDICINE

## FACULTY

- JOHN CLINTON FUTRALL, M. A., *President of the University*  
MORGAN SMITH, M. D., *Dean and Professor of Diseases of Children and Lecturer on Hygiene*  
EDWIN BENTLEY, M. D., U. S. A. (Retired), *Emeritus Professor of Surgery*  
JAMES H. LENOW, M. A., M. D., *Emeritus Professor of Genito-Urinary Diseases*  
FRANK VINSONHALER, M. D., *Professor of Diseases of the Eye, Ear, Nose and Throat*  
ANDERSON WATKINS, M. D., *Professor of Genito-Urinary Diseases and Associate Professor of Surgery*  
CALEB E. WITT, M. D., *Professor of Materia Medica, Pharmacology and Therapeutics*  
ARTHUR R. STOVER, M. A., M. D., *Professor of Chemistry*  
JOSEPH P. RUNYAN, M. D., *Professor of Surgery*  
CHARLES R. SHINAULT, M. D., *Professor of Gynecology*  
WILLIAM R. BATHURST, M. D., *Professor of Dermatology and Syphilology*  
JAMES L. DIBRELL, M. D., *Professor of Anatomy and Demonstrator of Operative Surgery*  
JOSEPH D. ARONSON, M. D., *Professor of Pathology and Bacteriology*  
JAMES L. GREENE, M. D., *Professor of Nervous and Mental Diseases*  
JAMES C. CUNNINGHAM, M. D., *Professor of Obstetrics*  
EDWARD M. PEMBERTON, M. D., *Professor of Physiology*  
A. EVERETT HARRIS, M. D., *Professor of Clinical Medicine*  
ORANGE K. JUDD, M. D., *Professor of Medicine*  
CARLE E. BENTLEY, M. D., *Associate Professor of Surgery*  
WM. A. SNODGRASS, M. D., *Associate Professor of Surgery*  
EDWARD P. BLEDSOE, M. D., *Associate Professor of Nervous and Mental Diseases*  
JOHN G. WATKINS, M. D., *Associate Professor Diseases of Eye, Ear, Nose and Throat*

- DAN R. HARDEMAN, M. D., *Associate Professor of Pediatrics*  
 MAHLON D. OGDEN, M. D., *Associate Professor of Gynecology*  
 OSCAR GRAY, M. D., *Associate Professor of Gynecology*  
 ROBERT CALDWELL, M. D., *Associate Professor of Diseases of Eye,  
 Ear, Nose and Throat*  
 SAMUEL S. STEWART, M. D., *Associate Professor of Obstetrics*  
 HENRY THIBAUT, M. D., *Associate Professor of Medicine*  
 HENRY H. KIRBY, M. D., *Demonstrator of Anatomy*  
 CHARLES R. CHESNUTT, M. D., *Assistant in Physiology*  
 ROBERT L. SAXON, B. S., M. D., *Lecturer on Gynecology*  
 ALBERT G. MCGILL, M. D., *Lecturer on Medicine*  
 AUGUST M. ZELL, M. D., *Lecturer on Electro-Therapeutics*  
 HENRY H. KIRBY, M. D., *Lecturer on Surgical Anatomy*  
 THOMAS E. HODGES, M. D., *Lecturer on Anatomy*  
 SAMUEL P. VAUGHIER, M. D., *Lecturer on Materia Medica*  
 ARMOUR K. WAYMAN, M. D., *Lecturer on Materia Medica and  
 Pharmacology*  
 C. W. GARRISON, M. D., *Lecturer on Tropical Diseases*  
 M. E. DUNAWAY, B. A., LL. B., *Lecturer of Medical Jurispru-  
 dence*  
 ROSCOE C. KORY, B. A., M. D., *Instructor in Histology and Em-  
 bryology*  
 CHARLES E. OATES, B. A., *Laboratory Instructor in Chemistry*  
 J. P. SHEPPARD, M. D., *Clinical Instructor in Medicine*  
 J. VINCENT FALISI, M. D., *Clinical Assistant in Surgery*  
 L. O. THOMPSON, M. D., *Assistant in the Bacteriological Labora-  
 tory*  
 STERLING P. BOND, M. D., *Clinical Assistant in Genito-Urinary  
 Diseases*  
 CHAS. BROOKOVER, Ph. B., A. M., *Laboratory Instructor in His-  
 tology and Embryology*  
 HOMER SCOTT, B. S., M. D., *Assistant in Electro-Therapeutics*  
 ELBERT STEWART, D. D. S., *Lecturer on Oral Hygiene*  
 CHARLES S. HOLT, M. D., *Demonstrator of Operative Surgery*  
 CHARLES L. HALE, M. D., *Assistant in Surgical Pathology*  
 O. A. CARRUTH, *Chief Isaac Folsom Clinic*

The Medical Department of the University was organized at Little Rock in 1879. In 1911 it was consolidated with the College of Physicians and Surgeons and by an act of the general assembly became the Medical College of the University of Arkansas.

## ADMISSION

The College of Medicine is co-educational.

Admission to the College may be by examination or by certificate.

*Admission by Certificate.* For admission candidates must present fourteen units of high school work, these units being the same as those required for admission to the colleges at Fayetteville (see pp. 20-21).

*Required are:*

English, 3 units; algebra,  $1\frac{1}{2}$  units; plane geometry, 1 unit; history, 1 unit; physics, 1 unit; Latin, 2 units. For the 2 units of Latin, 2 units of either French or German may be substituted, provided a satisfactory examination in the elements of Latin grammar is passed.

Four and one-half additional units must be presented, selected from the following: Latin, 2 units, in addition to the 2 units required; Greek, 3 units; French, 3 units; German, 3; English, 1 unit in addition to the 3 units required; physical geography,  $\frac{1}{2}$  unit; philosophy, 1 unit; botany, 1 unit; zoology, 1 unit; biology, 1 unit; agriculture, 1 unit; civics,  $\frac{1}{2}$  unit; articulture, 1 unit; pedagogy, 1 unit; psychology,  $\frac{1}{2}$  unit; manual training,  $\frac{1}{2}$  unit.

*Admission by Examination.* Students who do not present acceptable credentials will be required to stand examinations for entrance. The examinations will cover the subjects required for admission by certificate and will be conducted according to the rules governing examinations for admission to the other colleges of the University.

The entrance examinations will be held at Little Rock by the State Superintendent of Public Instruction or by his authorized representative.

## REQUIREMENTS FOR GRADUATION

The degree of Doctor of Medicine (M. D.) is conferred on candidates who have met the requirements for graduation.

Candidates for the M. D. degree must be twenty-one years of age, must present satisfactory evidence of good moral character, and must have complied with the entrance requirements of this college.

Candidates must have attended and satisfactorily completed

four courses of lectures, no two of which shall have been attended in the same calendar year. Three years of the required work may have been done in some medical college or colleges of recognized standing whose requirements are equivalent to those of this college. The last year of the four years' work must be done in the Medical College of the University of Arkansas.

#### EQUIPMENT

*Buildings and laboratories.* The main building, erected in 1890, is a three-story brick structure containing a lecture hall, amphitheater, museum, dissecting room and laboratories. A second building occupied chiefly by laboratories, has been outgrown, and the east wing of the old state capitol is used for laboratories of chemistry, embryology, histology, physiology, pathology, bacteriology, clinical microscopy, surgical pathology and pharmacology. These laboratories are well equipped with new apparatus and supplies. The space is ample and the rooms are well lighted.

#### HOSPITAL AND CLINICAL FACILITIES

*The Logan H. Roots Memorial Hospital.* This public city hospital was founded by the late Logan H. Roots. Closed corridors connect the hospital with the clinical amphitheaters of the college building.

A large medical and surgical dispensary is connected with this hospital, which is conducted by members of the faculty.

*The Pulaski County Hospital.* This hospital is situated in the southwestern part of the city and has a capacity of two hundred beds.

A feature of the hospital is the cottage treatment of tuberculosis. Clinics are held at the hospital throughout the session.

*The University Hospital.* The College has perfected arrangements with Dr. Meek, the owner of the University Hospital, by which students will receive instruction in the hospital. It is well equipped with modern operating rooms and has a capacity of one hundred beds.

It has rooms especially arranged for the care of acute nervous and mental diseases and the treatment of inebriety and narcotic habits, and maternity wards for the care of obstetrical cases.

*The Isaac Folsom Clinic.* This clinic was named in honor of



the late Dr. Isaac Folsom, in consideration of his gift of an endowment of \$20,000. This clinic is under the direct and exclusive control of the faculty, and all its material is available for teaching purposes.

*St. Vincent's Infirmary.* St. Vincent's Infirmary, designed solely for the treatment of acute diseases, has a capacity of nearly two hundred beds. The hospital is splendidly equipped and conveniently situated. It is under the supervision and management of Sisters of Charity who are trained nurses.

*St. Luke's Hospital.* This new hospital for surgical and gynecological cases has been opened recently by a member of the faculty. It is modern in all its appointments.

#### STATE INSTITUTIONS

All of the eleemosynary institutions of the state are located in Little Rock. These include the Schools for the Blind, the School for Deaf Mutes, the State Hospital for Nervous Diseases, Penitentiary, Reform School, County and City Hospitals, etc., all of which contribute to the available clinical material.

#### EXPENSES

##### *Fees*

<i>Tuition Fee, per year .....</i>	<b>\$125.00</b>
<i>Graduation and Diploma Fee.....</i>	<b>25.00</b>

There are no other fees, but in the first and second year courses in chemistry a \$10.00 deposit to cover breakage, etc., is required; in the third year a \$2.00 deposit is required. After making the necessary deductions, the balance of a deposit is refunded.

##### *Living Expenses*

Board and lodging, including fuel and lights, may be had at a cost of \$4.00 to \$6.00 per week or of \$15.00 to \$20.00 per month.

##### *Hospital Appointments*

At the *L. J. H. F. M. Memorial Hospital* the staff annually appoints two resident physicians to serve twelve months each.

At the *University Hospital* Dr. E. Meek and his staff appoint two resident physicians every year.

At *St. Vincent's Infirmary* the staff selects two internes every year.

At the *Pulaski County Hospital* Dr. J. P. Sheppard and his staff select four internes every year.

At the *State Hospital for Nervous Diseases* the staff selects ten internes every year.

Appointment to the foregoing hospital positions are determined by competitive examinations. These examinations are held in the spring of the year and may be taken by graduates of the Medical College of the University of Arkansas.

#### ANNOUNCEMENT

Address Dr. Morgan Smith, Dean of the Medical College of the University of Arkansas, Little Rock, Arkansas, for the special *Bulletin of the Medical College*. The bulletin will give information in detail.

# THE BRANCH NORMAL COLLEGE

## FACULTY

WILLIAM STEPHEN HARRIS, SUPERINTENDENT, *Head of Mechanical Department, Instructor in Woodwork*

FREDERICK THOMAS VENEGAR, PRINCIPAL, *Psychology, Physical Science, Pedagogy*

A. R. REEVES, B. A., *Mathematics, Botany*

J. G. IRISH, JR., A. B., *Mathematics, Physiology*

H. M. TAYLOR, *History, Civil Government*

C. P. MCLURKIN, M. A., *Agriculture, Chemistry, Physics*

ERNESTINE I. COPELAND, B. A., *English*

IRENE C. ROSS, *English, Geography*

CHRISTINE RAMBO, B. M., *Vocal Music, History*

MAYME J. BLAKEMORE, *Sewing*

W. P. KOON, *Machine Shop and Forge*

The Branch Normal College is located at Pine Bluff, Arkansas. It was established pursuant to an act of the general assembly of Arkansas, of April 27, 1873, and has been in operation since 1875.

Its purpose is to provide industrial training and to train teachers for efficient service in the colored public schools of the state.

## PROPERTY AND BUILDINGS

The school property consists of twenty acres of land in the western suburbs of Pine Bluff.

The buildings include a two-story school building, containing an assembly hall, six class rooms, and cloak rooms; well equipped mechanical shops; and a dormitory for women.

## ADMISSION

Candidates for admission must be at least thirteen years of age and must pass a satisfactory examination in arithmetic, English grammar, geography, and United States history commensurate with the work covered in the fifth grade. Those coming from other schools must furnish evidence of satisfactory deportment and class standing.

## APPOINTMENT OF BENEFICIARIES

Beneficiary students may be appointed by the county judge of each county of the state. Students who receive these appointments pay no tuition fees.

## FEES AND EXPENSES

The *matriculation fee* is \$5.00.

Students not having appointments, *entrance fee*, \$5.00.

*Board, fuel, and light* in the women's dormitory cost \$8.00 per month.

*Tuition* costs \$1.00 per month.

All fees are payable in advance.

## DEPARTMENTS OF THE BRANCH NORMAL COLLEGE

*Preparatory Department.* In the preparatory department the foundation academic subjects are studied. The work of the department corresponds to sixth, seventh and eighth grade public school work.

*Normal Department.* To enter the normal department the student must have completed the work of the preparatory department. The purpose of the normal department is to prepare students for teaching. Upon satisfactory completion of the four years' course of study, students receive the L. I. (Licentiate of Instruction) Certificate.

*Industrial Department.* Beginning with the second year in the preparatory department, all students are required to pursue certain industrial courses. The industrial work extends through four years, and the completion of the work is attested by a certificate of efficiency.

Young men do shop work in mechanic arts, carpentry, and cabinetmaking, and have the opportunity to become skilled blacksmiths, machinists, engineers or firemen.

Young women are taught plain sewing, cutting and fitting, and art needle-work.

*Agricultural Department.* In this department two courses of study are offered, one designed especially for students who are preparing to teach in the public schools, and a second course, for those who intend to teach agriculture. The latter course includes work in agronomy, farm economics, and kindred subjects.

## LITERARY SOCIETIES AND RHETORICALS

The *Phyllis Wheatley Literary Society* is a literary society for young women; the *Philosophian Literary Society* is a society for young men.

*Rhetoricals.* Public rhetorical exercises are held once each month. All students are required to take part in these exercises.

## ATHLETICS

There is an athletic association for young men and a similar association for young women.

## ANNOUNCEMENTS

The next session of the Branch Normal College will begin on Tuesday, September 8, 1914.

Entrance examinations will be held on September 2, 3, 4, and 5.

Further information regarding the work of the Branch Normal College may be had from Superintendent W. S. Harris or Principal F. T. Venegar, Pine Bluff, Arkansas.

## DIVISION OF EXTENSION

By the inauguration of the Division of Extension, the University of Arkansas plans to offer to every community and to each citizen of the state the advantages of an education of high school, college, or university grade, as well as to offer training in vocational and technical subjects. This policy has been approved by the Board of Trustees and an administrative organization provided. In order that the University may render to the entire state the service which the people have the right to demand, the University intends to increase its extension staff, to multiply the various forms of extension activities, and to work out a unified plan that will enable it to reach all the people systematically and effectively with educational influences.

At present the work of the Division of Extension is divided into three departments: first, Correspondence Study; second, Lectures and Addresses; third, General Information.

**STUDENTS.** Courses offered by the Department of Correspondence Study are especially planned for two classes of students: first, men and women who desire to pursue studies included in a liberal education of the character and grade of a high school or college, but without any reference to an academic degree; second, those who intend to qualify themselves for academic recognition or to increase their professional efficiency.

### WORK OFFERED

**HIGH SCHOOL WORK.**—The extension division offers some of the secondary courses usually found in the better high schools of the state. These courses not only prepare for entrance those who intend going to college, but are of just as great value to the young men and women of Arkansas who are going out as active workers without the advantages of college training.

These courses are not intended to conflict or compete with the high schools of the state. Their object is to reach, first, those students who reside in rural communities or small towns that do not support first grade high schools; second, persons who for



any reason find it impossible to attend their local high schools, or to obtain in those high schools certain courses which they desire.

**WORK FOR COLLEGE CREDIT.**—A large proportion of the courses offered by the University may be done by correspondence for college credit. No degree will be conferred on any one who does not take at least one year's work in residence at the University, and as a rule this must be the final year of the course.

**VOCATIONAL STUDIES.**—As the demand for them arises, the University will offer all the industrial courses possible for the benefit of persons engaged in the various vocations, trades and crafts.

**COURSES NOT YET OFFERED.**—It is the intention, as soon as possible, to add other courses to those listed in the bulletin of extension. Inasmuch as the work is new in the State of Arkansas, and it is not yet known for what kind of work the demand will be greatest, those who do not find in this bulletin a course which they desire to take are invited to write to the Division of Extension and state their wants. Such course will be given as soon as a sufficient number of applications are received to warrant it.

## PROCEDURE AND ADMINISTRATION

**HOW TO REGISTER FOR COURSES.**—Application blanks will be sent free of charge to all applicants who wish to enroll in any course offered by the Division of Extension of the University. These application blanks should be carefully filled out and returned to the Division of Extension with the fee or fees required.

**INSTRUCTION.**—Upon receipt of the fee for any course, the first lesson in that course is mailed to the student and proper directions for filling out and returning the lesson sheets are sent in the same mail. A reasonable length of time is allowed for completing each assignment, when the student will send back his report of the assignment, always enclosing postage for the return of his papers. The lessons and reports, once corrected, are mailed back to the student with such suggestions as the instructor may deem advisable. The number of assignments, or lessons, for the various courses vary with the subject matter of each course. The number of credit hours to be obtained by completing each course is found in the description of the course.

**EXAMINATIONS.**—As a rule, examinations are optional with the student. They are required, however, of all students seeking credit, either entrance or college, and examinations for credit must be taken at the University or under conditions named by the University. These conditions will never entail a hardship upon the student.

**EXPENSES.**—It has been decided to attempt the maintenance of this division of the University with smaller fees than those which prevail at most other institutions. A fee of \$2.50 will be charged for each semester course of three hours or less, or \$5.00 for such course running through a year, in addition to which the student will pay the return postage on his papers. It is expected that these fees will barely pay the actual cost of conducting the correspondence work. The entire fees for doing all the work of a year in the University will be less than \$30.00 per year, while about seven times that sum per year is required to maintain a student in residence at the University. It should be kept in mind, moreover, that the extension student retains all the time his full earning capacity. Students taking work by correspondence must expect to spend slightly more for text-books than they would in residence where they have the advantages of the use of the University library. A list of texts necessary to be used, together with the publishers and cost of the same, will be sent with the first lesson of each course.

#### REGULATIONS

1. Students may enroll in the correspondence courses at any time through the year.
2. The average student is expected to complete a semester course in from four to six months, but he has the privilege of completing any such course in less than four months. A semester course must be completed within twelve months from the time of registration.
3. Not more than two courses may be taken by correspondence at one time.
4. College credit is granted only to students who have met the entrance requirements of the University. For unconditioned entrance a student must present 14 units of high school work. A unit is defined as a high school study pursued for a year with daily recitations of 45 minutes each; it is further defined as approximately one quarter of a full year's work in a high school.

5. Students who enroll in correspondence study for a university degree must comply with all the requirements of the college or school in which such degree is sought. Each University degree is given for the completion of a four-year course of approximately 16 hours per year.

6. A student doing full work in another institution of learning, either high school or college, will not be permitted to register for correspondence work in the University of Arkansas. This privilege may be allowed to a student of another institution who is doing less than full work therein, but he must first secure the approval of the proper authority of his school.

#### STUDY CENTERS

Just as soon as funds will permit, University Extension Centers will be organized in connection with correspondence studies. This will be possible only where a sufficient number of students in the same town are taking the same course to justify the expense of sending a member of the faculty to that town from time to time to lecture on the subject matter of the course, and to give individual help to the students enrolled. For the time being this can be done only where the students themselves care to pay the actual traveling expenses of the instructor.

## Courses Offered by Correspondence in the College of Arts and Sciences

### ANCIENT LANGUAGES

All courses offered in this department are year courses, but Latin 1c and 2 may each be taken for a semester.

#### LATIN

ELEMENTARY LATIN—*3 hours college credit or 1 entrance unit.*

CÆSAR—Four books. Exercises in Latin composition. *Prerequisite:* Elementary Latin. *3 hours college credit or 1 entrance unit.*

A. CICERO'S ORATIONS AND LETTERS—*Prerequisite:* Cæsar. *3 hours college credit or 1 entrance unit.*

1. VERGIL'S AENEID—Six books of Vergil's Aeneid. *Prerequisite:* Latin A and 1c. *3 hours college credit or 1 entrance unit.*

1c. PROSE COMPOSITION—*1 hour college credit or 1/3 entrance unit.*

2. CICERO AND LIVY—Cicero's *De Amicitia* and *De Senectute*; Livy, selections. Roman private life. *Prerequisite:* Latin 1c and either Latin A or 1. *3 hours college credit.*

#### GREEK

1. ELEMENTARY GREEK—*3 hours college credit or 1 entrance unit.*

### BIOLOGY

1e. GENERAL ZOOLOGY—Year course. *3 hours college credit or 1 entrance unit.*

2e. PRINCIPLES OF BOTANY—Year course. *3 hours college credit or 1 entrance unit.*

### CHEMISTRY

1. ELEMENTARY CHEMISTRY—*By special arrangement this course may be made a review course for high school teachers.* Year course. *3 hours college or 1 unit entrance credit.*

2. QUALITATIVE ANALYSIS—Semester course. *Prerequisite:* Chemistry 1 or its equivalent. *2 hours college credit.*

3. THEORETICAL CHEMISTRY—Semester course. *Prerequisite:* Chemistry 1, Chemistry 2, and Mathematics. *2 hours college credit.*

#### APPARATUS AND SUPPLIES FOR THE COURSES IN CHEMISTRY

CHEMISTRY 1—Students must provide themselves with a balance sensitive to 0.0lg. and with a set of weights, 0.0lg. to 50g. and must have access to a barometer. The rest of the apparatus and chemicals needed for the course will be loaned for a deposit of \$20.00. A charge of \$2.00 will be made for the use of the apparatus and \$6.00 for the use of the chemicals. A further charge will be made for breakage and for packing and carriage. When the apparatus and chemicals have been returned the balance of the deposit will be refunded.

CHEMISTRY 2—For this course a deposit of \$25.00 will be required. The cost of the chemicals will be \$12.00 and the usual charges for breakage, packing and carriage will be made.

If students prefer, they may purchase all apparatus and supplies outright. The Department of Chemistry will indicate where the supplies needed may be purchased and will make an estimate of their cost.

#### ECONOMICS AND SOCIOLOGY

All courses offered in this department are year courses, but Economics 1 and 2 may be taken for a semester, with half the number of assignments and half the credit.

1. PRINCIPLES OF ECONOMICS—*3 hours college credit.*
2. MONEY, BANKING AND TRANSPORTATION—*3 hours college credit.*
3. THE ECONOMIC AND FINANCIAL HISTORY OF THE UNITED STATES—*3 hours college credit.*
4. SOCIOLOGY AND MODERN METHODS OF CHARITY—*3 hours college credit.*

OUTLINES AND LECTURES FOR STUDY CLUBS—The Department of Economics and Sociology will willingly cooperate with Christian organizations, civic clubs, labor unions, women's clubs, and communities wishing to give serious consideration to the problems of present day interest. By correspondence, courses can be

mapped out for study, and the Professor in charge will meet with the club at least once for a lecture and for conferences with the individual members of these organizations.

### EDUCATION

All courses offered in Pedagogy, Philosophy or Psychology are semester courses.

1e. GENERAL PSYCHOLOGY— $1\frac{1}{2}$  hours college or  $\frac{1}{2}$  unit entrance credit.

3e. EDUCATIONAL PSYCHOLOGY—1 hour college credit.

7e. SOCIAL PSYCHOLOGY— $1\frac{1}{2}$  hours college credit.

8e. PSYCHOLOGY OF ADOLESCENCE— $1\frac{1}{2}$  hours college credit.

20e. HISTORY OF EDUCATION— $1\frac{1}{2}$  hours college credit.

22e. THE TEACHING PROCESS—1 hour college credit.

23b. THE CURRICULUM—1 hour college credit.

25e. THE MODERN HIGH SCHOOL—1 hour college credit.

27e. SCHOOL MANAGEMENT— $1\frac{1}{2}$  hours college or  $\frac{1}{2}$  unit entrance credit.

271e. RURAL SCHOOL MANAGEMENT— $1\frac{1}{2}$  hours college or  $\frac{1}{2}$  unit entrance credit.

28e. COMPARATIVE SCHOOL SYSTEMS— $1\frac{1}{2}$  hours college credit.

30e. LOGIC— $1\frac{1}{2}$  hours college credit.

31e. ETHICS—2 hours college credit.

### ENGLISH

All courses offered in this department are year courses.

1e. ENTRANCE CLASSICS—1 unit entrance credit.

2c. AMERICAN LITERATURE—1 unit entrance credit.

3c. ENGLISH LITERATURE—College credit 2 or 3 hours, according to the amount of work done by the student.

### GEOLOGY AND MINING

1a. GEOLOGY—Semester course.  $1\frac{1}{2}$  hours college credit.

1b. GEOLOGY—Semester course.  $1\frac{1}{2}$  hours college credit.

2. GEOLOGY—Year course. 3 hours college credit.

1b. MINING—Semester course.  $1\frac{1}{2}$  hours college credit.

### GERMAN

The courses offered in this department correspond to the



courses of similar numbers given to resident students and the credit is the same.

1. ELEMENTARY GERMAN—*3 hours college or 1 unit entrance credit.*

2. READING OF MODERN GERMAN AUTHORS with composition based on texts read. *Prerequisite: German 1. 3 hours college or 1 unit entrance credit.*

2c. ELEMENTARY GERMAN COMPOSITION—*Prerequisite: German 1. 2 hours college credit.*

4. ADVANCED GERMAN COMPOSITION—*Prerequisite: 1, 2, 2c. 3 hours college credit.*

## HISTORY

1e. AMERICAN HISTORY—*1 entrance unit.*

2e. HISTORY OF THE UNITED STATES—*2 or 3 hours college credit according to arrangements.*

3e. GREEK HISTORY—*1 hour college credit.*

4e. ROMAN HISTORY—*1 hour college credit.*

## MATHEMATICS AND ASTRONOMY

All the courses in this department are semester courses except courses 3e, 6e, and 7e, which are year courses.

### MATHEMATICS

1e. MODERN PURE GEOMETRY—*Prerequisite: Mathematics 1a and 1b, 2a and 2b. 1½ hours college credit for each semester course.*

2e. COLLEGE ALGEBRA—*Prerequisite: College entrance requirements in Algebra. 1½ hours college credit.*

3e. ELEMENTARY ANALYSIS—*Prerequisite: Differential and Integral Calculus. College credit 3 hours.*

4e. PLANE TRIGONOMETRY—*Prerequisite: Courses 5e and 6e, or their equivalent. 1½ hours college credit.*

5e. ADVANCED COURSE IN HIGH SCHOOL ALGEBRA—*Prerequisite: An elementary course of at least 54 weeks. ½ unit entrance credit.*

6e. PLANE GEOMETRY—*1 unit entrance credit.*

7e. DESCRIPTIVE ASTRONOMY—*Prerequisite: Plane Trigonometry. 3 hours college credit.*

## PHYSICS

1. ELEMENTARY PHYSICS—Semester course. *No credit.*
- 1a. PROBLEM COURSE—Semester course. *No credit.*
2. GENERAL PHYSICS—Year course. *Prerequisite: One year of college physics. 3 hours college credit.*

## POLITICAL SCIENCE

- 1e. CIVIL GOVERNMENT—Semester course.  $\frac{1}{2}$  unit entrance credit.
- 2e. AMERICAN GOVERNMENT—Semester course.  $1\frac{1}{2}$  hours college credit.
- 3e. MUNICIPAL GOVERNMENT—Semester course.  $1\frac{1}{2}$  hours college credit.

## OUTLINES FOR STUDY CLUBS

The department stands ready to help Y. M. C. A. organizations, Civic Clubs, Labor Unions, and Women's Clubs wishing to give serious attention to the problems of today. By means of correspondence programs can be mapped out for a season's study and the instructor may meet with the club at least once for a lecture and for conferences with the individual members. The practical help of trained specialists will be very stimulating and will quicken the civic life of any community thus taking advantage of it.

## ROMANCE LANGUAGES

All courses offered in this department are year courses, but French 2 and 3 may each be taken for a semester, with half the number of assignments and half the credit.

## FRENCH

1. ELEMENTARY COURSE—3 hours college or 1 unit entrance credit.
2. ADVANCED FRENCH—*Prerequisite: French 1. 3 hours college credit.*
3. FRENCH LITERATURE OF THE SEVENTEENTH CENTURY—*Prerequisite: French 2. 3 hours college credit.*

## ITALIAN

1. ELEMENTARY COURSE—3 hours college or 1 unit entrance credit.

## SPANISH

1. ELEMENTARY COURSE—3 hours college or 1 unit entrance credit.

## Courses Offered by Correspondence in the College of Engineering

The College of Engineering offers a number of courses by correspondence study. Below will be found a brief outline of these courses and a more detailed statement will be made in a subsequent bulletin. For further information address the Extension Division of the University. Correspondence is also solicited concerning other courses, not at present offered, but for which there may be a demand. New courses will be added as the need arises and time permits their preparation.

The courses offered at present are principally for vocational training, and college credit will be given only in the Short Courses and Trades Courses. In special cases, however, where more extended study is arranged for, a certain amount of college credit in the four year courses in engineering will be given.

### CIVIL ENGINEERING

All courses in Civil Engineering are year courses.

2c. LETTERING—*2 hours college credit.*

3c. DESCRIPTIVE GEOMETRY—*2 hours college credit.*

5c. HIGHWAY CONSTRUCTION—*2 hours college credit.*

SURVEYING—*3 hours college credit.*

### ELECTRICAL ENGINEERING

1. DRAWING AND WIRING PLANS—Year course. *2 hours college credit.*

2. ELECTRIC LAMPS AND ILLUMINATION—Semester course. *No credit.*

3. CENTRAL STATION OPERATION—Semester course. *1 hour college credit.*

4. ELECTRIC WIRING FOR LIGHT AND POWER—Semester course. *1 hour college credit in four year course or short course.*

5. TELEPHONY—Semester course. *1 hour college credit.*

6. ELECTRIC METERS—Semester course. *1 hour credit in short course in Electrical Engineering.*

7. ELECTRICAL CONTRACTING—Semester course. *1 hour credit in short course in Electrical Engineering.*

## MECHANICAL ENGINEERING

All courses offered are year courses except 20a.

M. E. 10. MECHANICAL DRAWING—*2 hours college or  $\frac{2}{3}$  unit entrance credit.*

M. E. 13. ARCHITECTURAL DRAWING—*2 hours college or  $\frac{2}{3}$  unit entrance credit.*

M. E. 20a. STEAM ENGINES AND BOILERS—Semester course.  *$1\frac{1}{2}$  hours credit will be allowed in the short or trades courses in engineering.*

T. C. 12. AUTOMOBILE MECHANISM—*2 hours credit will be given only in the Automobile Machinist's Course for this work.*

For courses offered by correspondence in the College of Agriculture, see pp. 142-143.

## LECTURES AND ADDRESSES

The Division of Extension of the University of Arkansas offers a considerable number of lectures and addresses on various topics, suitable for general lecture courses, for meetings of teachers' associations, for clubs, or for high school commencements. The Division of Extension will be glad to arrange special courses to meet the needs of particular committees and occasions.

All lectures are furnished by the University at the actual cost of traveling expenses.

Address all communications concerning the departments of University Extension to the

DIVISION OF EXTENSION,  
University of Arkansas,  
Fayetteville, Arkansas.

# LISTS OF STUDENTS

## 1913-1914

### EXPLANATION OF ABBREVIATIONS

A.....	College of Arts and Sciences
E.....	College of Engineering
Ag. ....	College of Agriculture
F A.....	Department of Fine Arts
H E.....	Department of Home Economics
F.....	Freshman
So. ....	Sophomore
Jr. ....	Junior
Sr. ....	Senior
S.....	Special
Sc.....	Short Course
Gr.....	Graduate

Name	Course	Home Address
Adams, Allie Jarman	HE-S	Fayetteville
Adams, Elizabeth	A-Sr.	Pine Bluff
Adams, Noah	E-Sr.	Fayetteville
Albright, Chester	FA-F	Fayetteville
Alcorn, Maurice Lee	A-So	Little Rock
Alexander, Reba	A-Jr	Little Rock
Allen, Glen Luman	E-So	Warren
Allen, Vera	FA-S	Vian, Okla.
Allen, Walter	Ag-F	Batesville
Allis, Dave Mills	E	Little Rock
Amis, M. W.	A-So	Fort Smith
Andrews, Malloy	Ag-Sr	Siloam Springs
Applegate, Timothy Page	E-F	Rogers
Armitage, Marguerite	A-Sr	Harrison
Armstrong, A. B.	A-So	Wynne
Arnold, Ben C	A-So	Newark
Arnold, Carrie Weller	A-So	Pine Bluff
Arterberry, James William	Es-F	Celina, Texas
Ashley, George Foster	A-F	Bentonville
Ashley, John Fallan	A-F	Bentonville
Atkinson, Edwin Judson	E-Sp	Star City
Austin, Russel Hayden	Ag-F	Mena
Autrey, J. L.	E-Jr	Columbus
Baker, Maybin Steele	Ag-Sr	Little Rock
Banta, Katherine	A-Sr	Springdale
Bateman, Talmage Thomas	A-F	Clarendon
Barringer, P. J.	Es	Fayetteville
Barton, Flora Alma	A-Sr	Jonesboro
Barrow, Margaret	A-So	Forrest City
Barry, William Taylor, Jr.	E-Jr	Fayetteville
Batten, John Tucker	A-Jr	Paragould
Beall, Madge	A-So	Fort Smith
Beauchamp, Fay Olive	FA-F	Hot Springs
Bell, John Edward	E-Jr	Chidister

Name	Course	Home Address
Bell, Susan	A-Jr	Benton
Benton, Sidney Wright	Ag-F	Fayetteville
Berger, Gus Ottenheimer	Es-F	Malvern
Berry, Benjamin Marvin	Ag-Sr	Fayetteville
Berry, Margaret	A-Sr	Fayetteville
Berry, Robert Hemphill	A-F	Marion
Best, Jewell Boyd	A-F	Wilson
Bethel, Claude	E-Jr	Bates
Bird, Eulah	A-F	Springdale
Bird, Nellie	A-Sr	Waldron
Blackburn, Robert	Es	Prairie Grove
Blackman, Ora	A-Sr	Fayetteville
Blackshare, Deane	A-Sr	Fayetteville
Blackshare, James Osmer	A-Jr	Fayetteville
Blair, Florence	HE-S	Fayetteville
Blanks, Lane	A-So	Hamburg
Bonner, Ed C.	E-Jr	Glenwood
Boyd, Drury Tillman	E-F	Fayetteville
Boyd, Frances Leone	A-Sr	Fayetteville
Boyd, Martin	E-S	Leslie
Bradley, Burnelle	FA-F	Little Rock
Bragg, Peter Newport	A-Jr	Chidester
Bransford, Wallace I.	A-So	Lonoke
Brennan, Catherine Dorothea	A-Jr	Fayetteville
Brennan, Mildred Frances	A-Sr	Fayetteville
Briant, James Sidney	Ag-S	Hope
Briscoe, Elizabeth Hunt	HE-S	Fayetteville
Brough, Ann Roark	HE-S	Fayetteville
Brown, Bonnie Bess	A-F	Charleston
Brown, James Paul	Es-F	Fayetteville
Brown, Kathleen	FA-S	
Brown, Robert W.	A-So	Adona
Browne, Hazel	A-F	Fayetteville
Browne, Leroy Walton	E-Jr	Ward
Bryan, Harry W.	Ag-So	Van Buren
Bryan, Henry A.	Ag-S	
Bryan, Marie	HE-S	Fayetteville
Bryant, Carolyn Anna	A-Sr	Rector
Buchanan, Bettie Velma	A-F	Prairie Grove
Buchannan, Henrietta	FA-F	Fayetteville
Buchanan, John Garland	A-F	Prairie Grove
Buerkle, John George	E-Sr	Stuttgart
Buford, Albert Walter	E-So	Forrest City
Buford, Elouise	A-F	Forrest-City
Burney, Jim Berry	A-So	Green Forest
Burnside, John Raymond	Es	ElDorado
Burr, Edward Everett	Ag-F	Paragould
Bush, Dexter Aloman	A-S	Prescott
Butts, Joseph Bently, Jr.	A-F	Helena



Name	Course	Home Address
Cabe, Mary Ethel	A-Fr	Rhea
Calhoun, Irene	A-Fr	Fayetteville
Calloway, Jewell	A-F	Childress, Texas
Cammack, George Saltenberger	A-Jr	Portland
Cannon, Arthur A.	Ag-S	Fayetteville
Cargille, Louis Clare	A-Jr	Bentonville
Carl, Floyd Conklin	E-So	Siloam Springs
Carl, Mary Isola	FA-S	Siloam Springs
Cariley, Ruth Cleveland	A-F	Hazen
Carmichael, Lentes	A-F	Little Rock
Carnes, Grover Cloe	A-Sr	DeWitt
Carolan, Clem	A-So	Booneville
Carolan, T. Lester	E-So	Booneville
Carroll, Hugh Anderson	S-Sr	Valley Spring
Carroll, John Charles	A-So	Trull
Carter, Clara	HE-S	Fayetteville
Carter, James Irvin	E-F	Springdale
Carter, Jewell	A	Fordyce
Casey, Walter Burton	A-Sr	Boxley
Cates, Allen Wade	A-Jr	Boles
Chamberlain, Maurice Smith	E-F	Malvern
Chastain, Kathleen	A-So	Tulsa, Okla.
Cheever, Eleanor Louise	A-Gr	Richmond
Cheever, Lucy	A-F	Richmond
Chenault, Ella May	A-F	Fayetteville
Chenault, Lenna	FA-S	Fayetteville
Cherry, Lewis W., Jr.	A-F	Little Rock
Childress, Paul	Ag-So	Fayetteville
Childress, Ruth Anna	A-F	Fayetteville
Clark Cecil Leland	E-F	Malvern
Clark, Eulah	A-F	Goshen
Clark, Walter Owen	A-F	Egiantine
Clarke, A. Clarence	A-F	Van Buren
Clement, Joseph Winters	Ag-S	Pine Bluff
Cochran, Maurice W.	E-F	Fayetteville
Cochran, Sidney Allen	A-So	Booneville
Coker, Marion Barrow	E-So	Fayetteville
Cole, Edith	FA-S	Waldron
Cole, May	HE-S	Fayetteville
Collins, Albert James	E-Sr	Foreman
Collins, Pauline	A-F	DeQueen
Conner, Verna	HE-S	Fayetteville
Constant, Mabel Nelle	A-Jr	Van Buren
Cook, E. T.	E-Sr	Fayetteville
Cook, Jake	Ag-F	Fayetteville
Cooke, Jesse English	A-F	Little Rock
Cook, Maude	HE-S	Fayetteville
Courson, William Hershia	A-So	Hamburg
Coventon, Bessie	A-So	Oakland
Covington, Maxie	FA-So	Clarksville
Craig, Alfred Henry	A-S	Little Rock

Name	Course	Home Address
Craig, Richard Hobson	A-S	Wilson
Critz, Elleen	FA-	Bauxite
Crook, John Steger	Ag-s	Conway
Croom, Sam Gaston	A-Sr	Dardanelle
Cross, Cora Leyle	FA-	Pine Bluff
Cruze, Grant	E-Gr	Knoxville, Tenn.
Curnutt, Hugh Anderson	A-So	Harrison
Dabler, Fred H.	E-Jr	Evansville, Ind
Davenport, Bessie Gertrude	A-Sr	Hartford
Davenport, Richard Iva	A-F	Eureka Springs
Davidson, Elmer Cruse	E-Sr	Shreveport, La.
Davis, Frank Russell	ES-F	Chelsea, Okla.
Davis, Lucile	A-So	Lowell
Davis, Pauline	A-F	Jonesboro
Deaver, Mary Purman	HE-S	Fayetteville
Decker, Klerchia L.	A-So	Fayetteville
Decker, Kivia Leona	A-Sr	Fayetteville
Devaney, Hallie	HE-S	Fort Smith
Dinwiddie, James A.	E-Jr	Fayetteville
Dixon, John Lemuel	Ag-F	Mammoth Springs
Dodd, George	Ag-F	Russellville
Donoghue, William Kingston	A-So	Fort Smith
Dortch, R. L.	E-F	Lonoke
Dotson, Ethel	A-F	Fayetteville
Douglass, Eldridge Parrish	E-S	Helena
Dowd, Wallace Rutherford	E-F	Fort Smith
Dowdle, Robert Garland	E-Sr	Morrilton
Dubs, Ford	E-So	Fayetteville
Duncan, Edward Everett	A-Jr	Waldron
Duncan, William Wirt	E-Sr	Westville, Okla.
Dunn, Henry Shibley	A-So	Van Buren
Dunn, Homer W.	E-Sr	Fayetteville
Dunn, John Howard	E-Jr	Fayetteville
Dunn, William Augustine	E-Sr	Fort Smith
Dyer, Cyrus Leavitt	Ag-Sr	Fayetteville
Earl, R. D., Jr.	Ag-S	Morrilton
Eberle, John Pearson	ES-F	Fort Smith
Ekstrom, Lillian	HE-S	Fayetteville
Eld, Ellen Eva	A-So	Bentonville
Ellas, Harold	ES-F	Clarendon
Ellington, Frederick Merton	E-So	Monrovia, Calif.
Ellis, Robert Alvin	A-Jr	Hindsville
Fallin, Gertrude	HE-S	Fayetteville
Fallin, Joel	ES-F	Fayetteville
Farrior, Edwin Walton	Ag-F	Dardanelle
Fincher, Grade	E-S	Waldo
Fink, Harry Browne	A-S	Fort Smith
Fisher, Jerlin	A-F	Hazen
Fitzhugh, A. S.	ES-F	Augusta
Fletcher, Eric Peyton	E-So	Osceola
Fletcher, Read	Ag-S	Pine Bluff

Name	Course	Home Address
Flinn, Heber Howard	Ag-S	Fayetteville
Ford, Clarence Beech	A-F	Sulphur Rock
Forrest, Grace	A-So	Siloam Springs
Forrest, Leland Stanford	A-Jr	Siloam Springs
Forwood, Eleanor	A-Jr	Rogers
Frazier, Elmer Homer	A-So	Havana
Fulbright, Lucile Frances	FA-S	Fayetteville
Funk, Gladys A.	A-Sr	Rogers
Futrell, Annie Duke	HE-S	Fayetteville
Garner, Alma Tatum	FA-S	Marvell
Garner, Frank R., Jr.	A-So	Marvell
Garrett, Claude	A-Jr	Huntsville
Gerard, Adolphus Simonson	E-Jr	Estervan, Canada
Geren, Jerry M.	Ag-So	Fort Smith
Gerig, Francis Austin	E-Jr	Arkadelphia
Gettle, William Sheridan	Ag-S	Stuttgart
Gibson, Ruth	A-Jr	Jonesboro
Gill, T. Tapscott	A-F	Little Rock
Gilliam, Surrey Edgar	A-Jr	Locksburg
Gilmore, Annie Lucille	A-F	Fayetteville
Gladson, Hazel	A-S	Fayetteville
Gladson, Marion	A-Jr	Fayetteville
Goode, Fannie Belle	A-F	Helena
Goodwin, Idahugh	A-So	El Dorado
Goss, Alpha Lloyd	E-Jr	Fayetteville
Goy, Karl	Es-F	Fayetteville
Goza, Henslee Dupuy	E-S	Pine Bluff
Graham, Jesse James	E-Sr	Springdale
Greaves, Clifton David	A-So	Hot Springs
Green, Edward Grandison	E-So	Helena
Greene, Una	FA-S	Prairie Grove
Greenfield, Joe Chat	E-So	Batesville
Gregg, Pansy	A-Jr	Fayetteville
Gregg, Russell Cravens	A-Jr	Fayetteville
Greig, James Kibler	A-Jr	Van Buren
Greig, Mary Agnes	A-So	Van Buren
Griffin, Clifford Roy	A-F	Carlisle
Haar, Jessie Bragg	HE-S	Fayetteville
Hale, John J.	Ag-F	Bellefonte
Hall, Jullen	HE-S	Fayetteville
Hall, Virginia	HE-S	Fayetteville
Hall, W. L.	Ag-s	Waldron
Halter, Elmer	Ag-s	Conway
Hamby, Leonard Christopher	E-S	Prescott
Hamilton, Elleen	HE-S	Fayetteville
Hamilton, Paul Carroll	E-F	Hartford
Hamilton, Scott Downs	E-S	Fayetteville
Harding, Chester	E-Jr	Fayetteville
Hardin, Harvey	A-F	Clinton
Harrel, John Allen	A-S	Lewisville

Name	Course	Home Address
Harrel, Tracy Lee	E-F	Lewisville
Harrington, Alice	A-F	Fayetteville
Harris, Eutha	HE-S	Fayetteville
Harris, Hadley	A-So	Fayetteville
Harris, Martha	HE-S	Fayetteville
Hart, George Washington	A-F	Hartwell
Harvey, Robin	A-So	Booneville
Harville, Archie Watson	A-Jr	Augusta
Harville, Wm. Emerson	A-So	Augusta
Hays, Chas. Wentworth	E-Sr	Fayetteville
Hazard, Mark G.	Ag-So	Marathon, Iowa
Heagler, Earl Herbert	E-F	Fulton, Mo.
Hedrick, Della	HE-S	Fayetteville
Hedrick, Gideon E.	A-So	Fayetteville
Heerwagen, Paul K.	Ag-So	Fayetteville
Heerwagen, Ruth Marie	A-F	Fayetteville
Henderson, Charles Augustus	Ag-So	Centerton
Henry, Elbert Augustus	A-Sr	Jacksonville
Henry, John Decatur	A-So	Dierks
Henson, John Alfred	A-F	Judsonia
Hester, Edna Adell	HE-S	Fayetteville
Hicks, Homer Wilton	E-S	Blue Jacket, Okla.
Higgs, Morton Thomas	E-So	Idabel, Okla.
Hight, Alice	FA-S	Fayetteville
Hill, Fannie May	A-F	Nashville
Hill, Willie Sue	A-F	Nashville
Hilton, Esther Childs	A-So	Pueblo, Colo.
Hirsch, Ralph	E-Jr	Newport
Hollabaugh, Essie	A-Sr	Leslie
Holmes, Lewis Oscar	E-F	Amity
Holmes, Odus Garfield	A-So	Harrison
Holt, Joe Berry	A-Sr	Harrison
Holt, Mitchell Lafayette	A-Sr	Harrison
Hon, Mabel Fairfax	A-Sr	Fort Smith
Hooper, Orville C.	A-So	Magazine
Hopkins, Emma Agatha	FA-So	Paragould
Hopper, David Claude	E-Jr	Caddo Gap
Hopper, Ira Clark	A-Sr	Caddo Gap
Horner, John C.	Ag-F	Hot Springs
Horner, Justin Zena	FA-S	Hot Springs
Horton, Gertrude	A-F	Arkadelphia
Horton, Horace R.	E-So	Fort Smith
Horton, Margaret	A-F	Ozark
Hough, Harry Cecil	Ag-s	Springdale
Howell, Mildred	A-F	Hot Springs
Huber, Casper Albert	E-Jr	Werner
Hudson, Clarence Sherman	A-S	Alix
Huenefeld, Arnold	Ag-s	Gregory
Hughes, Anna	A-Jr	Fayetteville
Hughes, Jewell	A-Jr	Fayetteville
Humphreys, Francis Aldridge	E-Sr	Fayetteville

# LIST OF STUDENTS

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Name	Course	Home Address
Hunt, Ralph Berry	A-So	Dardanelle
Hunter, Thomas Emmett	E-F	Broken Arrow, Okla.
Huntly, Bruce Wilson	E-Sr	Kirkland
Hurlock, Leslie	A-Jr	Siloam Springs
Hurst, Floye	A-So	Fayetteville
Huston, Mary Mae	A-F	Fayetteville
Izard, Letha	A-Sr	Mountain Grove, Mo.
Jackson, William Henderson	A-F	Mena
Jankovsky, Adolph	Ag-s	Moberly, Mo.
Jelks, Clarence Clay	A-So	Augusta
Jobe, Dalton L.	Ag-S	Fayetteville
Johnson, Byron Everette	Ag-S	Waldo
Johnson, Nelle	A-Jr	Hackett
Jones, Annie Laurie	A-F	Clarksdale
Jones, Maurice	E-Jr	Batesville
Jones, Webster	Ag-F	Little Rock
Jordan, Ellwood S.	E-S	Waldo
Jordan, Mary O.	A-Sr	Newman, Ill.
Jordan, Pauline	A-Jr	Little Rock
Joyner, J. Edward	A-Jr	Atkins
Keith, Allen	Ag-Sr	Van Buren
Keller, Fred	A-Sr	Jonesboro
Kelley, Charles Q.	A-Sr	Corning
Kelley, Dalton Roscoe	E-F	Hope
Kennard, Rolfe Powell	A-Jr	Fayetteville
Kennedy, Walter Earle	E-Sr	Fayetteville
Kenney, James	A-S	Van Buren
Kilgore, Vesta Belle	A-Jr	Garvin, Okla.
Kimbrough, Ethel	A-So	Dutch Mills
Kindley, Ola	A-F	Gravette
Kitchens, Chester Earl	A-Fr	Magnolia
Kneer, Irene	A-Jr	Fayetteville
Knoch, Elmo Albert	E-Jr	Fayetteville
Kolbe, James Reuben	A-F	Ola
Krone, Marie Ann	A-F	Fort Smith
Kunz, Gladys	A-Cr	Fayetteville
Lacy, Sterling	E-s	Fayetteville
Ladd, Agnes Rainwater	HE-S	Fayetteville
Lake, Edward C.	A-Sr	De Queen
Lake, John Pinnix	A-Jr	De Queen
Lamberton, Horace C.	E-Sr	Harrison
Lamberton, Mattie	A-F	Harrison
Lanford, Nellie Bly	A-F	Helena
Lano, Mildred	A-So	Fayetteville
Laser, Lucile	A-Sr	Clarksville
Lawson, Hugh M.	A-F	Fayetteville
Lawson, Lillian	A-Gr	Fayetteville
Lee, Arthur F.	Ag-F	Little Rock
Lee, Arthur W.	A-Jr	Center Point

Name	Course	Home Address
Lee, Lucas Snyder	E-So	Fayetteville
Lee, Robert Davis	A-Jr	Center Point
Lee, Wendell Douglas	A-So	Center Point
Leonard, Bonnie	HE-S	Leslie
Levy, Jewell Josephine	A-F	Cellina, Texas
Lide, Katherine	A-So	Camden
Lighton, Dorothy Rheem	A-So	Fayetteville
Lighton, Louis Puryer	A-So	Fayetteville
Lincoln, Blanche Alpine	A-F	Van Buren
Lincoln, Lena Adaline	A-F	Van Buren
Liske, Edwin John	A-F	Argenta
Looper, Thurman William	Es-F	Midland
Looper, Virgil Harold	Es-F	Midland
Mackey, Florence Minnie	A-Jr	Seymour, Mr.
Magale, Lillian Margaret	A-F	Magnolia
Magness, Perry G.	E-Sr	Magness
Mahan, Louise	FA-S	Jonesboro
Marlioni, Mrs. A.	HE-S	Fayetteville
Martin, Leo, Jr.	Es	Warren
Martin, Marlin Clack	A-Sr	Little Rock
Martin, Ray	Ag-S	Austin
Martin, William Clude	A-Fr	McCaskill
Massey, Beal	Ag-F	Morrilton
Mather, Juliette Edla	A-So	Fayetteville
Mather, Marie Porter	HE-S	Fayetteville
Matthews, Ben Buford	A-F	Pine Bluff
May, Russell	A-Sr	Little Rock
Mealor, Roy	E-F	Hartford
Melvin, Eva Paul	FA-F	Newport
Merrill, Walter Delno	E-F	Rogers
Metcalf, Roy James	A-Sr	Horatio
Michel, Karl Joseph	A-F	Van Buren
Middlebrooks, Edna Mary	A-So	Hope
Middlebrooks, Ida Annie	A-So	Hope
Milburn, John B.	E-F	Fayetteville
Miller, Edith White	HE-S	Fayetteville
Miller, Florence	A-S	Van Buren
Mills, Earle Watkins	E-F	Nashville
Milton, Wallace M.	E-F	Ozark
Mixon, Gladney S.	A-F	Atlanta
Mixon, Harvey	A-Sr	Atlanta
Moody, Clark	E-So	Bald Knob
Moore, Curt Stephens	A-F	
Moore, Emily Donald	A-So	Van Buren
Moore, Fred	A-F	Quitman
Moore, John Isaac	A-F	Helena
Moore, Lucille	A-So	Carthage, Mo.
Moore, Lyla Gertrude	A-Jr	Fayetteville
Moore, William Wanda	A-F	Sulphur Rock
Morehead, Louise	A-Sr	Hot Springs
Morris, Robin Hooker	Ag-s	Mountain Home



Name	Course	Home Address
Morton, Ruth	A-F	Fort Smith
Morton, Winifred	HE-S	Fayetteville
Moss, Lowell Raymond	A-Gr	Little Rock
Moss, Mildred Mills	A-Sr.	Little Rock
Murrey, Joseph Hoffmaster	A-So	Little Rock
Myers, Carlton Brien	A-F	Helena
McAdams, Alberta	HE-S	Fayetteville
McBride, Berta	A-So	Fayetteville
McBride, John Edgar	A-So	Fort Smith
McCain, Melbourne Galloway	A-Jr	Pine Bluff
McCartney, Norman Alexander	E-S	Fayetteville
McCarty, Robert Oscar	A-Sr	Yellville
McClurkin, Daisy	A-F	Stephens
McConnell, Willard Wilkinson	A-So	Charleston
McCormick, Thomas G.	E-s	Prairie Grove
McCoy, Alleen	A-So	Fayetteville
McCoy, Nora	A-F	Fayetteville
McCraith, Oscar Vaughan	A-F	Brinkley
McCulloch, Richard	A-Jr	Little Rock
McDonald, Guy W.	A-F	Fayetteville
McDonald, Louise	A-So	Fort Smith
McFarland, Eldred	A-F	Muskogee, Okla.
McFarlane, Marguerite	A-Jr	Fayetteville
McFarlane, William	A-Jr	Fayetteville
McGaugh, Emma	A-F	Gentry
McGaugh, Callie	A-Sr	Gentry
McGill, Minto	E-Sr	Chidester
McGill, Sidney Smith	E-Sr	Chidester
McGill, Walter Greenfield	A-Jr	Chidester
McIntyre, Leslie T.	Ag-S	Pine Bluff
McKinney, Ruth	A-Jr	Corning
McKnight, David	A-Jr	Guy
McNair, Effie	A-F	Little Rock
McNeill, Leonora	FA-S	Magnolia
McPherson, Ralph Russell	Ag-Sr	Stuttgart
Nelson, Edward Houston	A-Jr	Cauthron
Nelson, Mrs. E. H.	A-So	Cauthron
Newman, Herbert Alexander	Es-F	Little Rock
Newton, William K.	A-Jr	Russellville
Nichols, Gelene	A-F	Ozark
Norwood, Frank Anderson	A-F	Little Rock
Nunn, Henry Edwin	E-So	Blue Mountain
Oates, Bonner	Ag-F	Pottsville
Oates, Eunice	FA-S	Fayetteville
Oliver, Grace	A-So	Eureka Springs
O'Neal, Beatrice Virginia	A-So	Springdale
O'Neal, Lloyd Edwin	E-So	Rogers
Osborne, Virginia	A-F	Fort Smith
Oster, Mabel Addie	A-So	Rogers

# UNIVERSITY OF ARKANSAS

Name	Course	Home Address
Ott, Russell	A-So	Hamilton, Kan.
-Overton, Minnie	A-F	Greenway
Owen, George Williford	A-So	Fayetteville
-Owens, Alford Rice	A-F	Greenwood
Owens, Marlon Elizabeth	A-Jr	Helena
-Palmer, Roy C.	Ag-F	Fayetteville
-Pape, Frank Davis	E-Fr	Van Buren
-Parchman, Oscar Dinsmore	A-F	Van Buren
-Park, Mae Deatus	A-Jr	Conway
-Parsons, Lloud Chandler	E-Jr	Fayetteville
-Payne, Elbert E.	E-Sr	Forrest City
-Payne, Harold B.	E-Sr	Fort Smith
-Payne, Weston	E-So	Forrest City
Peay, Nick, Jr.	E-S	Little Rock
Pendleton, Hyatt Fleet	E-F	Junction City
-Pendleton, Murtie Louise	A-F	Junction City
Penix, Fred Lloyd	A-So	Bond
Peterman, Hugh Bedford	A-F	Fayetteville
-Pettigrew, Helen Lyle	A-Jr	Charleston
-Phillips, Augusta Keeney	HE-S	Fayetteville
-Phillips, Bess Agnes	A-Jr	Fayetteville
Philpot, Lillian	A-F	Pine Bluff
Poff, Albert Alonzo	A-Sr	Jonesboro
-Polk, Carmen	FA-S	Fayetteville
-Polk, Mary Linda	A-F	Fayetteville
Porter, Earl	Es-F	Lake Village
-Porter, Florence Edwina	A-Jr	Little Rock
-Porter, William Haynie	Ag-S	Little Rock
-Potter, G. C.	E-Sr	Fayetteville
-Potter, H. N.	A-Sr	Fayetteville
-Potter, Mabel Melissa	A-Sr	Fayetteville
-Potter, Rissie Lolce	Ag-S	Fayetteville
-Potter, Winnifred Kathryn	A-Sr	Fayetteville
Powell, James Carson	A-F	Maysville
-Poynor, Neff	Es	Berryville
-Pratt, Joy	A-Jr	Fayetteville
-Prothro, Roy Evan	A-S	Pinnacle
Purkey, S. S.	E-F	Springdale
Pyeatt, Clara Josephine	A-Jr	Cane Hill
-Quick, William Cecil	Ag-Sr	Elm Springs
Rainwater, Robert Orville	A-S	Imboden
Ramsey, Marion Adele	A-F	Fayetteville
-Randolph Lee Payton	E-F	Hot Springs
-Ratliff, Emmett Marshall	E-Sr	Healing Springs
Rawlings, Aubrey J.	A-So	Judsonia
-Rawlings, T. P.	E-So	Judsonia
Ray, Inez	HE-S	Fayetteville
Ray, May Bush	A-F	Jacksonville
-Redus, Frank	A-Jr	Harrison

Name	Course	Home Address
Reed, Reuben	Ag-S	Fort Smith
Reeves, George Norris	A-F	Green Forest
Reeves, Harry Bryan	A-F	El Dorado
Reeves, Ruth	A-F	Green Forest
Rehbein, Charlotte	HE-S	Fayetteville
Rice, Phillip	E-So	Bentonville
Richardson, B. N.	A-So	Paragould
Richardson, J. Clifton	Ag-S	Warren
Ridling, Little	Ag-So	Mena
Ridling, Nell	E-F	Mena
Rieff, Mary	HE-S	Fayetteville
Roark, Granville Wade, Jr.	A-Gr	Franklin, Ky.
Roberts, Roberta	A-F	Rogers
Robertson, Fred Jackson	A-S	Rison
Robinson, Henry Evalyn	A-Jr	Jonesboro
Robinson, Lillian Alice	A-So	Clarksville
Rodgers, Eunice	A-So	Fayetteville
Robers, Clementeen	A-So	Prairie Grove
Rogers, Julian	FA-S	Prairie Grove
Rogers, Williamson Haley	A-S	Clarksville
Romine, Gladys	FA-S	Van Buren
Roney, Annie Josephine	A-F	Hamburg
Rosencrantz, Franklin Carl	Ag-So	Fayetteville
Roy, Marco Benjamin	E-Sr	Russellville
Rudd, James Thomas	A-So	Van Buren
Rudolph, Freda	A-Sr	Fayetteville
Rudolph, Grace Obara	HE-S	Fayetteville
Rye, Vim X.	E-Jr	Van Buren
Sadler, William Paul	A-So	Van Buren
Sailor, Vance Laird	A-F	Bigelow
Sanders, Blanche	FA-S	Fayetteville
Savage, Opal Frances	A-F	Carlisle
Schluter, Annie	A-S	Texarkana
Schoolfield, Eunice	A-Sr	Fayetteville
Schoolfield, John Lafayette	Es-F	Fayetteville
Scott, Ellen	A-So	Helena
Scott, Sterling Price, Jr.	E-So	Little Rock
Scurlock, Edward Holmes	A-Sr	Piggott
Scurlock, Stella	A-F	Piggott
Seaman, John A.	Ag-S	Gentry
Shell, Bennie	A-So	Rosston
Shell, Effie	A-F	Rosston
Shelton, Wilma Loy	A-Sr	Terre Haute, Ind.
Shuffield, N. E.	A-Sr	Nashville
Shuffield, Mrs N. E.	A-Jr	Nashville
Shultz, Louise Virginia	A-S	Oklmulgee, Okla.
Sifford, Gaylord	Es-F	Camden
Silverman, Bessie	A-F	Antlers, Okla.
Silverman, Gussie	FA-S	Antlers, Okla.
Simco, Allie	FA-S	Fayetteville
Simpson, Floyd Blanton	A-F	Fayetteville

Name	Course	Home Address
Simpson, Julia	HE-S	Fayetteville
Slisco, Cleo	A-F	Osage
Skaggs, Cuba	FA-S	Fayetteville
Sloan, Victor	Ag-S	Portia
Smead, Hamilton	A-So	Camden
Smith, Calvin Didnew	E-Jr	De Queen
Smith, Carr	Ag-F	Fayetteville
Smith, Earl Webster	Ag-Sr	Fayetteville
Smith, Estelle	A-F	Stephens
Smith, Euclid Theodore	A-Jr	Amity
Smith, Finley Baster	A-F	De Queen
Smith, Gladys	HE-S	Fayetteville
Smith, Harold Arthur	A-So	Monroe, La.
Smith, Hattye	A-S	Siloam Springs
Smith, Henry W.	Ag-S	Tyro
Smith, Myrtle	A-F	Waldron
Smith, Oscar D.	Ag-So	Hamburg
Snyder, Bryan, Jr.	A-So	Marshall, Texas
Soule, Gertrude Blanche	FA-S	Berryville
Southall, Richard Columbus	A-Jr	Marion
Southworth, Alice Helen	A-F	Fayetteville
Spaulding, Mrs. Walter I.	FA-S	Fayetteville
Stanton, Will Alfred	A-F	Little Rock
Stephenson, Ola Diza	A-F	Timbo
Stevenson, Eberle Upshaw	E-Jr	Marianna
Stevenson, James Edward	Ag-F	Dardanelle
Stewart, Chas. J.	E-So	Stuttgart
Stewart, Clyde	A-F	Pine Bluff
Stewart, Jessie	FA-S	St. Paul
Stewart, L. G.	E-Sr	Little Rock
Stewart, Reid	E-Jr	Three Creeks
Stockburger, Roy	A-Sr	Fayetteville
Stoffer, Dorliska	HE-S	Fayetteville
Stone, James Benjamin	A-F	Stephens
Stone, Marion	A-Jr	Fayetteville
Stough, Dawling Blueford	A-S	Vinita, Okla.
Stout, Samuel Rodney	Ag-Sr	Rogers
Stowitts, Dorothy Ashley	HE-S	Fayetteville
Stuckey, Helen	A-Jr	Johnson
Sullards, Helen	A-S	Bentonville
Swilley, George W.	E-Jr	El Dorado
Tanner, Joseph	A-F	Blytheville
Taylor, Chas. E.	A-So	Little Rock
Taylor, Irene Olcott	A-So	Paragould
Taylor, Vena Mabel	A-So	Siloam Springs
Templeton, Robert Cornelius	Ag-S	Fort Smith
Tennyson, Ruby Sadie	A-F	Muskogee, Okla.
Thomas, Alvin Nelson	E-So	Amity
Thomas, Chas.	A-F	Little Rock
Thompson, Camille	FA-S	Gilmore
Thompson, Joe McKee	Es-F	Warren

# LIST OF STUDENTS

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Name	Course	Home Address
Thompson, Lliburn E.	E-Jr	Valley Springs
Thompson, Orval Curry	E-F	Fayetteville
Thompson, Sydnie Maye	A-F	Ozark
Thorn, Jesse Andrew	E-F	Harrison
Thornton, Robert E.	E-Sr	Hot Springs
Tipton, Goodwin	A-So	Forrest City
Tisdale, Leonard Edward	Es-F	Rison
Titus, Ira Ralph	E-Sr	Mena
Toney, Morgan	A-F	Pine Bluff
Torbett, Harris E.	A-F	Avoca
Trahin, Eugene	Ag-F	Fayetteville
Trantham, Edna	HE-S	Springfield, Mo.
Trent, Ruth	A-Sr	Fayetteville
Trimble, Bessie Mae	A-F	Lonoke
Trible, James W.	A-F	Osage
Tucker, Moseley Clarence	Ag-Sr	Fayetteville
Turner, Adlai Stevenson	E-Jr	Lockesburg
Turner, Lyle B.	E-S	Atkins
Tyson, Harvey Jewel	Ag-Sr	Camden
Uzzelle, George	Es-F	Pecan Point
Uzzelle, Jack	A-F	Pecan Point
Vaughan, John Edward	E-So	Little Rock
Verdell, William Bennet	Es	Jacksonport
Vineyard, George H.	Ag-S	Helena
Volentine, Paul	E-Sr	Charleston
Wade, Jessie	HE-S	Fayetteville
Wade, Hopkins	A-Sr	El Dorado
Wakefield, George Edwards	E-F	Rogers
Walkup, Robert Montgomery	A-So	Havana
Wallace, Jerry	A-Fr	Russellville
Walls, James Allen, Jr.	E-S	Holly Grove
Walls, Louise	A-Jr	Holly Grove
Warren, Charles I.	E-So	Black Rock
Warner, William Preston	E-F	Fayetteville
Wasson, Artie	A-F	Westville
Wasson, Bertice	A-S	Westville
Waters, Robert Franklin	A-Sr	Havana
Watson, Damon	A-Jr	N. McAlester, Okla.
Watson, Joethel	A-F	N. McAlester, Okla.
Watson, Louis Elizabeth	A-So	Amity
Waugh, Charles M.	E-S	Rothville, Mo.
Weisiger, Joe, Jr.	E-S	Hope
Wells, George C.	E-So	Pucell, Okla.
Wells, Walter Wisdom	A-F	Charleston
Whaling, Mary	A-F	Winslow
White, Eddie Sonora	A-So	Fayetteville
White, Tell Tehompson	E-So	Pocahontas
Wiggins, Sam B.	A-Jr	Fayetteville
Wilkes, James Carwell	A-So	Star City
Wilkinson, Margaret	A-F	Fayetteville

Name	Course	Home Address
Williams, Ben Robinson	A-Jr	Jacksonport
Williams, Edna	A-F	Fayetteville
Williams, William Dudley	A-So	Franklin
Willson, Hazel	FA-S	Ola
Willson, James Freed	A-Jr	Ola
Wilson, Arthur Lee	E-F	Cabot
Wilson, Donald Deane	A-So	Fayetteville
Wilson, Hallie Barlow	HE-S	Fayetteville
Wilson, Margaret	HE-S	Fayetteville
Wilson, Ray Gilbert	E-So	Osage
Winfrey, John Simon	A-Sr	Rudy
Winn, James A.	A-So	Russellville
Wohra, Har Das	E-Sr	Piro Shah, Gujrat, Punjab, India
Wolf, Lennie Rachel	A-F	Fayetteville
Wolf, Wyatt Horton	E-Sr	Mountain Home
Womack, H. E.	A-S	Hugo, Okla.
Womack, Vee	A-F	Hugo, Okla.
Wood, A. E.	A-F	Hope
Wood, Alva Edison	A-F	Portland
Wooddy, Lemuel Dale	E-Sr	Fayetteville
Woodfin, Eugene Locke	A-So	Brinkley
Wooten, William Richard	E-So	Russellville
Worcester, Mildred May	A-F	Quinton, Okla.
Wozencraft, Anna Jeannette	A-F	Fayetteville
Wright, Curtis Clarence	A-F	Fort Smith
Wyche, Pat	A-So	Memphis, Tenn.
Yeager, Hugh	E-F	Hope
Youmans, F. W.	A-S	Fort Smith



# DEGREES, DIPLOMAS AND CERTIFICATES

June, 1913

## HONORARY DEGREE OF DOCTOR OF LAWS (LL.D.)

George B. Rose

John Hugh Reynolds

## ELECTRICAL ENGINEER

S. B. Graham

## BACHELOR OF ARTS

L. I. Anderson

Willie Anderson

Elza Roe Atkinson

W. H. Barton

P. L. Bayley

Florence Wise Belts

R. L. Blakely

Lochle Dale Blackshare

Alva Leona Bledsoe

Mabel Blanche Brereton

T. J. Bullock

Madeline Anderson Deane

R. L. Davis

Lena E. Deeg

Mary Inez Droke

J. E. Gist

Hazel Wade Gladson

Anna Martha Harris

H. F. Heltzclaw

R. Horton

T. A. Jackson

Fannie Louisa Kelton

B. S. Kinsworthy

A. C. Kirby

Zora Langston

Lillian Lawson

J. E. Marsh

E. F. Mills

J. G. Moore

Jennie Morton

R. D. McCluer

C. J. McLelland

J. L. Newberry

Myrtle Louise Orton

J. O. Rhyne

Edna Julia Rice

Edith Snell

Irene Tilley

R. C. Waldron

J. W. Webb

M. W. Williams

Anna Stella Whitty

R. W. Wood

W. W. Wooddy

C. N. Wylle

## BACHELOR OF CIVIL ENGINEERING

S. S. Buckley

G. Cruze

A. C. Hamilton

H. W. Horton

S. W. Moore

W. R. Overton

## BACHELOR OF ELECTRICAL ENGINEERING

C. H. Achenback

W. H. Bransford

W. E. Douglass

T. M. Northum

F. L. Oneal

G. W. Schalchlin

G. M. Snodgrass

G. W. Watkins

## BACHELOR OF MECHANICAL ENGINEERING

E. W. Parcell

H. Richmond

H. D. Wohra

*(See preceeding page)*

## BACHELOR OF SCIENCE IN AGRICULTURE

J. L. Cherry	LeRoy Highfill
J. H. Collins	George Strickland
Star Greig	

## CERTIFICATE OF LICENTIATE OF INSTRUCTION.

Marguerite Armitage	Mary Alice Harris
P. L. Bayley	Lillian Holcombe
Mary Garland Barton	Mabel Hon
Florence Wise Belts	Anna Hughes
Dean Blackshire	Claudine Jamison
Alice Bland	Fannie Kelton
Alva Bledsoe	I. May McCulley
Frances Boyd	J. W. Oliver
Blanche Brereton	R. L. Potter
Anna Bryant	Kate Reed
T. J. Bullock	Edna Julia Rice
Fannie Daniel	Edith Snell
Lucy Davis	Mary Ruth Waller
Elizabeth Ellis	R. F. Watters
Gladys Funk	

## CERTIFICATE IN MECHANIC ARTS

John Danner

## POST-GRADUATE CERTIFICATE IN PIANOFORTE

Eunice Oates	Eleanor Mastin
--------------	----------------

## DIPLOMA IN PIANOFORTE.

Floy Johnson	Lucy Cory
Verda Hughes	

## DIPLOMA IN PIANO AND VOICE

Brickelle Davis

## CERTIFICATE IN VOICE

Irene Steele

## CERTIFICATE IN PIANOFORTE

Vida Killian	Minnie Buerkle
Lillian King	

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Maple Street

Goodland Avenue

Arkansas Avenue

Dickson Street

Track

Athletic Field

# CAMPUS UNIVERSITY of ARKANSAS

- 1 Ella Samuell Hall
- 2 Fraternity Hall
- 3 Chemistry Building
- 4 Green House
- 5 Agriculture Building
- 6 Extension Office
- 7 Experiment Station
- 8 Hospital
- 9 Hill Hall
- 10 Day Hall
- 11 Buchanan Hall
- 12 Bath House
- 13 Shops
- 14 Engineering Hall
- 15 Dairy Building
- 16 Transformer
- 17 Sand Stand
- 18 Residence, Foreman of Farm
- 19 Barns
- 20 Bleachers
- A, B, C, D Tennis Courts

